**BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, AT NEW DELHI**

ORIGINAL APPLICATION NO. 393 OF 2022

IN THE MATTER OF:

Ashish Kumar Dwivedi …Applicant

Versus

State of Uttar Pradesh & Ors. …Respondents

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FILED BY:

VANSHDEEP DALMIA
ADVOCATE FOR THE RESPONDENT
206, JorBagh, New Delhi-110003
M. No. 9810077085
vanshdeepdalmia@gmail.com

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**BEFORE THE NATIONAL GREEN TRIBUNAL,
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ORIGINAL APPLICATION NO. 393 OF 2022

IN THE MATTER OF:

Ashish Kumar Dwivedi …Applicant

Versus

State of Uttar Pradesh & Ors. …Respondents

REPLY TO OA NO. 393 OF 2022, JOINT COMMITTEE REPORT DATED 7.10.2022 & ADDITIONAL OBSERVATIONS OF CPCB DATED 11.11.2022, ON BEHALF OF RESPONDENT, SHAILENDRA YADAV

TO,

THE HON'BLE CHAIRPERSON AND HIS COMPANION JUDGES OF THE LEARNED NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH, NEW DELHI.

THE HUMBLE REPLY OF THE ANSWERING RESPONDENT HEREIN:

MOST RESPECTFULLY SHOWETH:

1. The answering Respondent, *Shailendra Yadav* was impleaded pursuant to the Orders dated 16.12.2022 passed by this Hon'ble Court, and is filing the present Reply in furtherance of the Order dated 1.03.2023.

It is submitted that the answering Respondent seeks liberty to the file a detailed para-wise Reply, as and when directed and required by this Hon'ble Tribunal.

2. At the very outset the answering Respondent submits the averments made in the present OA are concocted, misleading, baseless and factually incorrect, including the photographs that do not pertain to the Respondent herein and are thus denied in *toto* except specifically admitted hereinafter. It is submitted that the answering Respondent has not been involved in violation of Environmental norms as averred in the OA or the Joint Committee/ CPCB Report, and conducted mining in terms of the prevalent law and directions of the Respondents No. 1-8.

BRIEF FACTS:

3. The Answering Respondent was declared the successful bidder in the Auction in respect of Khand No. 31/4, Village Patyora, Tehsil, Hamirpur, District Hamirpur *(hereinafter referred to as the 'said Mine')*, admeasuring 36.437 ha for Sand/Morrum mining. ALetter of Intent (LOI) was issued on 07.06.2018 for conducting Sand Mining Operations for a period of 5 years.

It is pertinent to mention that the LOI nowhere revealed the details of the Geo-coordinates or details of cluster situation as required under Clause 4.2 of the EMGSM, 2020 Guidelines.

4. That in compliance of then prevalent Clause 23 the UP Minor Mineral Concession Rules, 1963, a Demarcation Map was provided by the Mining Officer, Hamirpur indicating the Geo-Coordinates of the said mine. Based on the said Geo-Coordinates, the Respondent submitted a Mining Plan along with Progressive Mine Closure Plan on 27.08.2018 for the said mine and the same was duly approved by the Department of Mines and Geology.

A true Copy of the Demarcation Map provided by the Mining Officer, Hamirpur in terms of Clause 23 of the UP Minor Mineral Concession Rules, 1963 is annexed hereby as **ANNEXURE A- 1**at pages. **33**

5. The Answering Respondent applied for Environmental Clearance for conducing mining operations and the Respondent No. 5 SEIAA vide its letter dated 22.10.2018 granted Terms of Reference (TOR) to the Respondent for the said mine, which

included the preparation of a detailed EIA study, EMP and a Public Consultation. The said EC was applied based on the Cluster Certificate dated 16.07.2018 issued by the Respondent District Magistrate, Hamirpur.

A true copy of the Cluster Certificate dated 16.07.2018 issued by District Magistrate, Hamirpur to the Answering Respondent is annexed hereby as **ANNEXURE A- 2** at pages.**34**

6. That in consonance with the provisions of the EIA,2006, and the TOR dated 22.10.2018, acomprehensive EIA study and EMP Plan was prepared by the Respondent, whereinafter a Public hearing was held on 28.11.2019 in respect of the said mine and the Final EIA Report was submitted by the Answering Respondent on 04.07.2020.

7. The SEAC, UP vide its meeting dated 29.07.2020 recommended for grant of EC in favour of the Respondent for the said mine, which was accepted by the Respondent No. 5, SEIAA, UP in its meeting dated 24.09.2020, and a prior EC dated 13.10.2020 was granted in favour of the answering

Respondent, in respect of the said Mine situated in Khand No. 31/4.

A true copy of the Environmental Clearance (EC) dated 13.10.2020 issued by the Respondent No. 5, SEIAA UP in favour of the Answering Respondent is annexed hereby as **ANNEXURE A- 3** at pages.**35-42**

8. The answering Respondent thereafter applied for and was granted Consent to Operate (CTO) dated 23.10.2020 for the said mine under the provisions of the Air Act, 1981and the Water Act, 1974 by the Respondent No. 6, UPPCB for a period 23.10.2020 to 31.12.2021.

It is trite to submit that due to a clerical/typographical error the consent period written in the CTO issued under the Water Act is 23.10.2020 to 31.12.2020 whereas the same ought to have been till 31.12.2021, in parity with the CTO under the Air Act. The said inadvertent error has just come to the attention of the answering Respondent, and in process of being pointed out to the UPPCB and rectified.

A true copy of the Consent to Operate (CTO) dated 23.10.2020 issued by Respondent No.6, UPPCB in favour of the answering Respondent under the Air Act, 1981 is hereby annexed as **ANNEXURE A-4** at pages **43-45**

A true copy of the Consent to Operate (CTO) dated 23.10.2020 issued by Respondent No.6, UPPCB in favour of the answering Respondent under the Water Act, 1974 is hereby annexed as **ANNEXURE A-5** at pages **46-48**

9. In terms of Clause 29 of the UPMinor Mineral Concession Rules, 1963, a Mining Lease dated 7.01.2021 was executed by the Respondent No. 7, District Magistrate for a period of 5 years in respect of the said Mine. The said Mining lease was for the area as precisely demarcated by Mining Department.

10. The project proponent commenced mining activities during the period 13.01.2021 to 31.05.2022, *(excluding the Rainy season)* and excavated a mineral quantity of 6,28,335 cubic m which was within the prescribed limit, and not exceeding the daily quantity permitted to be mined per day.

11. The present OA was filed alleging illegal sand mining activities being undertaken in District Hamirpur, Uttar Pradesh by various mine lease holders (including the answering Respondent) in violation of law.

12. This Hon'ble Tribunal vide Order dated 26.05.2022 constituted a Joint Committee of representatives of Director, Mining and Geology, Government of Uttar Pradesh, CPCB, State PCB and District Magistrate, Hamirpur and directed them to submit a factual and Action taken Report after undertaking site visits.

Furthermore, this Hon'ble Tribunal directed the Applicant to implead the mining lease holders vide its Orders dated 26.05.2022, 10.10.2022, 16.12.2022 and 1.03.2022 and permitted them to file their respective replies.

13. In compliance of the Order dated 26.05.2022, the Joint Committee (excluding the CPCB) filed its report dated 16.11.2022. The Report of the Joint Committee briefly states as under:

ILLEGAL SAND MINING

(i) The allegation of the Applicant that illegal sand mining is going on is not true. The District administration is

regularly monitoring the lease hold area. Two out of the six mining lessees, including the answering Respondent (Shailendra Yadav) have not obtained consent under the Air/ Water Acts.

SUBMERGED WATER AREA/ HEAVY MACHINERY

(ii) At the time of site visit (during the Rainy season) the mining areas were submerged and no mining operations were taking place. The Committee did not find any sign of mineral being extracted from submerged water/ middle of river, as alleged.

MINING BEYOND SANCTIONED LEASE AREA

(**iii**) Mining was being conducted within the area sanctioned and demarcated in favour of the Lease holders, except by M/s Kanha Constructions & M/s Annapurna Udhyog.

MINING WITHOUT FOREST CLEARANCE

(iv) No forest land is included in any of the Mining lease hold areas and the same have been executed after obtaining NOC of the forest department.

A true copy of the Report of the Joint Committee dated 11.11.2022 filed by the UPPCB in compliance of the Order

dated 26.05.2022 passed by this Hon'ble Tribunal is hereby annexed as **ANNEXURE A-6** at pages **49-56**

14. The CPCB on 11.11.2022 filed its Additional Observations wherein it made observations in respect of issues relating to **(i)** cluster Mining **(ii)** mismatching of Geo-Coordinates **(iii)** in stream mining **(iv)** excess mining and use of heavy machinery **(v)** Mining in agricultural and forest land **(vi)** illegal mining (**vii)**Compliance of EC conditions **(viii)**Compliance of consent conditions **(ix)** Compliance of SSMG, 2016/ EMGSM 2020 **(x)** Status of CSR/ CER, and **(xi)** Environmental Compensation.

A true copy of the Additional Observations by CPCB dated 11.11.2022 is hereby annexed as **ANNEXURE A-7** at pages. **57-142**

15. That vide Order dated 01.03.2023, this Hon'ble Tribunal *interalia* permitted the Mining lease holders/ Respondents 9-15 to submit their Reply on the issues raised in the Joint Committee Report/ Additional observations by the CPCB.

REPLY ON MERITS

16. At the outset, it is submitted that the observations made in the Joint Committee Report/ Additional observations by the CPCB

are legally untenable and based on incorrect facts. Further, though all the representatives of the Joint Committee were to file a report *'jointly'*, the CPCB has made certain observations in isolation without concurrence or acceptance of the other representatives, which was not warranted under the Order dated 26.05.2022 passed by this Hon'ble Tribunal. The CPCB on an incorrect appreciation of facts and law, has wrongly recommended an astronomical amount of compensation which even otherwise is wholly disproportionate, excessive and absurd.

Be that as it may, the issue wise Reply pertaining to the answering Respondent is as under:

(i) CLUSTER ISSUE

The Observation of the CPCB that the Cluster Certificate issued in 16.07.2018 being considered instead of the Cluster certificate issued in 30.07.2020 is incorrect and wrong, in as much as, the CPCB has failed to appreciate that the Cluster Certificate of 2020 was issued after the Public Consultation, submission of the Final EIA Study and appraisal by the SEAC

that recommended for grant of EC. These aspects are clear from the following:

(a) The Cluster Certificate dated 16.07.2018 was issued by the Respondent No. 7, District Magistrate on 16.07.2018 post issuance of the LOI dated 07.06.2018.

(b) The Mining Plan along with Progressive Mine Closure Plan was submitted by the answering Respondent on 27.08.2018, which was duly approved by the Department of Mines and Geology.

(c) The answering Respondent applied for EC, and TOR was granted by SEIAA, UP on 22.10.2018. Thereafter public hearing was held by the UPPCB on 28.11.2019 and the Final EIA was submitted on 04.07.2020. That the SEAC, UP in its meeting dated 20.07.2020 recommended the grant of EC in favour of the Respondent for the said mine.

(d) Thus, it is evident that all 4 stages of, Screening, Scoping, Public Consultation & Appraisal were completed prior to the issuance of the second Cluster Certificate dated 30.07.2020, which even otherwise was

never communicated to the Answering Respondent, albeit by the Respondent SEIAA who accepted the SEAC recommendations for grant of EC vide its MOM dated 24.09.2020 and did not consider it necessary to impose any additional conditions.

It is trite to further submit thatthe Cluster approach was meant for Small Mine Cluster and does not apply in the present case. Notably, Clause 4.1.1 (k) of the Enforcement & Monitoring Guidelines for Sand Mining, 2020 [EMGSM,2020] states as under:

"4.1.1.*Cluster situation shall be examined. A cluster is formed when one mining lease of homogenous mineral is within 500 meters of the other mining lease. In order to reduce the cluster formation mining lease size should be defined in such a way that distance between any two clusters preferably should not be less than 2.5 Km.* *Mining lease should be defined in such a way that the total area of the mining leases in a cluster should not be more than 10 Ha"*.

It is submitted that the area of the alleged Mine in the Cluster being more than 36 ha and the total lease area of the Mining projects as per the purported Cluster certificate dated

30.07.2020 being 218 ha, i.e. more than 10 ha individually as well as jointly, do not form a cluster as per Clause 4.1.1 (k) of the EMGSM, 2020. Hence, it is submitted that the Cluster Certificate dated 16.07.2018 was rightly considered for grant of EC by the Respondents No. 1-8.

(ii) MISMATCHING OF GEO-COORDINATES OF THE LEASE AREA

The answering Respondent has been conducting mining operations in Khasra No. 31/4, Village Patyora, District Hamirpur, U.P, strictly in consonance with the precise mining area demarcated and allotted by the Mining Department, and the same is evident from the following:

(a) The LOI issued in favour of the answering Respondent on 7.06.2018 did not refer to any Geo-Coordinates and only mentioned the Khand No. i.e. Khand No. 31/4, Village Patyora, Tehsil, Hamirpur, District Hamirpur having an area of 36.437 ha.

(b) Thereaftera Demarcation map was provided by the Mining Officer, Hamirpur indicating the Coordinates of the said mine. Based on the said Geo-Coordinates

indicated on the Demarcation Map, Mining plan was prepared and a prior EC dated 13.10.2020 was granted in favour of the answering Respondent after a comprehensive EIA study/ EMP.

(c) It is submitted that as per Rule 29(1) of the U.P. Minor Minerals (Concession) Rules, 1963, the Mining lease was to be executed within a period of 3 months from the date of grant of EC, failing which the security amount tendered by the project proponent would be forfeited and the lease would be treated as null and void. The said Rule 29(1) is extracted below for the ready reference of this Hon'ble Tribunal:

"***29(1)****"The successful bidder/tenderer after receiving the letter of intent of concerned e-tender/e-auction/ e-tender cum e-auction shall produce, approved mining Plan and clean Environment Certificate prescribed as per rule, and a lease deed concerning the same will be executed in form MM-6 or in similar format. The registration of the executed lease deed will be registered within three month period. The period of lease will be counted from the date of execution of the concerned lease deed. If due to fault on the part of lease*

holder, registration of the said executed lease deed is not registered within three months, then the said lease deed will be treated as null and void and the amount of security will be seized by the District magistrate."

(d) That the EC dated 13.10.2020 issued in favour of the answering Respondent vide general condition No. 4 provided that the *"precise mining area will be jointly demarcated at site by project proponent and officials of Mining/Revenue department prior to starting of the mining operations…"*. Thus, the Mining site was identified by the Mining Department after carrying out the above stated demarcation exercise and did not result in change of Khasra number 31/4, entailing capacity addition with change in process and or mining technology, modernization and scope of working.

(e) The submission of the Mining Officer that '*the lease area have been allotted on the basis of the identified Khand Numbers'* has been duly recorded in the Additional Observations filed by the CPCB. The other observation of the CPCB that the Allotted Mining lease was situated mid-stream whereas the sanctioned lease is

towards the bank of the River bank is misconceived and evident from an ostensible and bare perusal of the Map attached by the CPCB itself at Annexure-02 of the Report. Moreso, the site visit was conducted during the Rainy Season during which the flow of the River is dynamic and in general all River bed mining lease areas across the State are largely submerged in water.

Therefore, it is submitted that the answering Respondent was duty bound to execute the Mining lease deed as per the area demarcated by the Mining Department or else the security deposit deposited by the Respondent would have been seized.It is respectfully submitted that theanswering Respondent started its mining operation on the *bona fide*, honest and genuine belief that the demarcation done by the concerned department was correct and as per GPS coordinates provided in the Demarcation report/ EC. This is further evident from the Joint Committee Report dated 16.11.2022 which states that *"the lessees are doing mining operation within the area sanctioned and demarcated in their favour with the help of two permanent points mentioned in map."*

That without prejudice to the above, it is submitted that the Study area in the EIA Report was 10 km (aerial distance) from the boundary of the mine lease area. Further, an in depth monitoring study was done for the entire study area on the basis of baseline data generated qua all environmental parameters including ambient air, water (surface & ground water), land, soil, ecology and socio economic status etc… The said baseline data was collected by a team of experts, which was then sampled and analysed on environmental parameters for the purposes of the EIA study/ EMP.

Hence, the entire area of the purported cluster and/or allotted/ sanctioned mine area has been assessed from an environmental perspective whose collated Impact assessment has comprehensively been conducted. Thus, even otherwise there has not been any damage / degradation to the environment, due to the mining activities.

(iii) MINING IN EXCESS OF THE DAILY PRODUCTION LIMIT

The CPCB has wrongly observed that the answering Respondent has exceeded the daily production of 2915 m^3/ day as prescribed in the EC dated 13.10.2020. To arrive at this

conclusion, the CPCB has considered the Daily production data provided by the Mining Officer for the period 07.01.2022 to 31.05.2022 i.e. for 145 days, wherein the maximum transported Mineral for some days is higher than 2915 m^3.

It is submitted that the said production data is calculated as per the Form MM-11 issued by the District Magistrate/ Mining Officer for transportation of minerals, which is mandatory under Rule 70 of the UP Rules, 1963and issued for transportation and not for daily excavation.

*"**70**. **Restrictions on transport of the minerals**:*

*(1) The holder of a mining lease or permit or a person authorised by him in this behalf may issue a pass in Form **MM-11** to every person carrying, a consignment of minor mineral by a vehicle, animal or any other mode of transport. The State Government may, through the District Officer, make arrangements for the supply of printed MM-11 Form books on payment basis".*

The daily production data as provided by the District Mining officer does not remotely reflect the dailyexcavation and only indicates the daily sales transaction/ mineral transported.It is a commonly followed practice that the quantity of mineral excavated is not entirely sold on the same day and is stocked

for future sales eg. during the Rainy seasons and the said practice is nowhere prohibited under the EC conditions.

That according to the data provided by the Mining Officer and relied upon by the CPCB, the Answering Respondent transported 3,39,098 m^3 in 145 days from 07.01.2022 to 31.05.2022. That going by these figures/ data which merely depict the transportation of 3,39,098 cubic meter sand over a period of 145 days and not the production, the average daily production is indicatedin the following chart.

TABLE [Average Daily Production]

S.No.	**Period of Mining**	**Total Production (Cubic meter)**	**No. of Mining days**	**Average Daily Production (Cubic meter)**
1.	13.01.2021 to 6.01.2022	2,89,237	254	1138.72
2.	07.01.2022 to 31.05.2022	3,39,098	145	2,338.60

The above table clearly establishes that the answering Respondent has excavated mineral well below the daily

prescribed production limit of 2915 m^3/ day prescribed under the EC dated 13.10.2020.

(iv) <u>CONSENT TO OPERATE (CTO) UNDER AIR/ WATER ACTS TAKEN TILL 31.12.2021</u>

(Without Prejudice - Not required for Sand Mining)

The CPCB incorrectly and wrongly observed that *'none of mining projects had valid consent at the time of commencement of production',* in as much as, the answering Respondent had dulyobtained CTOs on 23.10.2020 in respect of the said Mine from the Respondent No. 6, UPPCB, for the period 23.10.2020 to 31.12.2021 under both the Air and the Water Act.

It is trite to submit that due to a clerical/typographical error the consent period written in the CTO issued under the Water Act is 23.10.2020 to 31.12.2020 whereas the same ought to have been till 31.12.2021, in parity with the CTO under the Air Act. The said inadvertent error has just come to the attention of the answering Respondent, and is in process of being pointed out and rectified by the UPPCB.

It is submitted that on the assumption that *FIRSTLY*, CTO has not been obtained by the answering Respondent, and *SECONDLY*, that CTO is required under the Air/Water Act and not taking of CTO renders the EC invalid, the CPCB has recommended or levying of Environmental Compensation, which even otherwise is highly disproportionate, excessive and arbitrary.

That without prejudice to the above submissions, it is submitted that under the provisions of the Air/Water Acts, there is no statutory mandate to take CTO/CTE for conducting Sand Mining operations.

WATER ACT

That Section 25 of the Water Act, 1974*interalia*states that, *'no person shall, without the previous consent of the State Board, establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land'*.

That during the activity of Sand mining/excavation of Sand, there is no discharge of sewage or trade affluents into a stream

or well or sewer. A perusal of the Mining Plan as well as the EC clearly prohibits any in-stream mining, and also ensures that the mining is always above the ground water level, and thus in absence of such discharges, no CTO under the said Water Act is required.

AIR ACT

That as per Section 21 of the Air Act, 1981, *'no person shall, without the previous consent of the State Board, establish or operate any industrial plant in an air pollution control area'. Under Section 2(k) of the Act, the expression 'industrial plant' is defined, 'means any plant used for any industrial or trade purpose and emitting any air pollutant into the atmosphere'.*

It is submitted that during the activity of Sand mining/ excavation of sand, only an excavator machinery (JCB) is used which cannot be construed as an *'Industrial plant/ Plant'* for the purposes of Section 21 of the Air Act, 1981, which ought to be permanent fixture.

Thus, the Respondent was never required to take a CTO under the Air/ Water Acts and this removes the very genesis of the

CPCB Report/ observations, and therefore makes the Environmental compensation as recommended by the CPCB, inapplicable.

Furthermore, the CPCB itself had issued a Notification on 2.11.2018 which *interalia* stated that *"For industries requiring EC, issuing of consent by SPCB/ PCCs shall be a one step process and EC will be deemed as CTE in such cases."*Hence, since a prior EC was obtained by the answering Respondent, it was under the*bona fide* impression that CTO was not required and hence the same was not re-obtained/ re-applied for after the expiry of the earlier CTO's on 31.12.2021.

A true copy of the Directions dated 2.11.2018 issued by the CPCB under Section 18 of the Air & Water Act(s) is hereby annexed as **ANNEXURE A- 8** at pages.**143-145**

That the issue whether CTO/ CTE is required for Sand Mining activities is pending consideration before the Hon'ble Supreme Court in a batch of matters being, Civil Appeal No. 7008/2022 in the matter of *M/s Star Mines vs State of UP*, Civil Appeal No.1938/2023 in the matter of *Sanjay Bhatia vs UPPCB*, Civil Appeal No. 1939/2023 in the matter of *M/s Shakumbari Mines*

vs UPPCB, Civil Appeal No. 1940/2023 in the matter of *M/s Satender Kumar vs UPPCB*, Civil Appeal No. 1606/2023 in the matter of *Adesh Pandey vs UPPCB* and Civil Appeal No. 7176/2023 in the matter of *M/s Balaji Trading Co. vs UPPCB.*

It is pertinent to mention that the Hon'ble Apex Court vide its Orders in the above mentioned Civil Appeals, has stayed the operation of the Impugned Order dated 11.05.2022 passed by this Hon'ble Tribunal levying Environmental compensation for not obtaining CTO under the Air/ Water for Sand Mining activities.

A true copy of the Synopsis filed in the Hon'ble Supreme court in Civil Appeal No. 7008/2022 in the matter of *M/s Star Mines vs State of Uttar Pradesh* is hereby annexed as **ANNEXURE A-9** at pages **146-164**

A true copy of the Order dated 26.09.2022 passed by Hon'ble Supreme Court in Civil Appeal No. 7008/2022 in the matter of *M/s Star Mines vs State of Uttar Pradesh* is hereby annexed as **ANNEXURE A- 10** at pages.**165-166**

A true copy of the Order dated 03.03.2023 passed by Hon'ble Supreme Court in Civil Appeal No. 7176/2023 in the matter of

M/s Balaji Trading Co. v. UPPCB is hereby annexed as **ANNEXURE A- 11**at pages.**167-168**

A true copy of the Order dated 20.03.2023 passed by Hon'ble Supreme Court in Civil Appeal No.1938/2023 in the matter of *Sanjay Bhatia v. UPPCB* is hereby annexed as **ANNEXURE A- 12**atpages**. 169-170**

EIA, 2006 covers all aspects of impact of Sand Mining on Air/ Water Environment

It is submitted that the Environmental Impact Assessment Notification dated 14.09.2006 (EIA, 2006) is a complete code in itself, which conclusively and exhaustively deals with aspect of impact of sand mining, on the Air and Water Environment. Under Schedule 1(a) of the EIA, 2006 read with the Judgment passed by this Hon'ble Court in *Deepak Kumar*, all mining leases of minor/major minerals (irrespective of size) mandatorily requires an Environmental Clearance (EC) which entails an Environmental Impact Assessment (EIA) study and a Environmental Management Plan (EMP).

The requisite Form 1 under the EIA, 2006 records the impact of sand mining activity on the air, water and land environment as

a whole. Furthermore, the EIA Study makes a comprehensive and detailed assessment of such impact after a scientific study whereinafter the EMP provides mitigation measures ensuring that the sand mining activity is conducted in an environmentally sustainable manner.

The aforesaid is submitted to dispel any impression that the non-applicability of the Air/Water Acts to Sand Mining activities would have an adverse impact of the Environment, in as much as, the same is exhaustively and thoroughly dealt with under the EIA, 2006, albeit in a broader/ more far-fetched manner than under the Air/ Water Acts.

It is pertinent to clarify that the answering Respondent restricts its above argument to Mining of Sand only, and not to any other Major or Minor mineral, as the mining of other minerals unlike sand requires some sort of a permanent structure or plant and/or discharge of effluents etc…

(v) ENVIRONMENTAL COMPENSATION RECOMMENDED TO BE LEVIED IS DISPROPORTIONATE, EXCESSIVE AND HIGHLY EXORBITANT

That the mining activities were conducted by the answering Respondent for a period of 390 daysfrom 13.01.2021 to 31.05.2022.

The UPPCB has calculated and imposed Environmental Compensation of Rs.32,00,000/- on the Answering Respondent for the period of 320 days wherein the mining was allegedly done without obtaining requisite consents. It is submitted that, as averred in the preceding paras, the Answering Respondent had valid consents under the Air/Water Acts from 23.10.2020 to 31.12.2021. Hence, the Environmental Compensation is not based on accurate facts and thusis unwarranted and not leviable.

That without prejudice to the above it is submitted that, no Environmental Compensation whatsoever should have been imposed upon the Answering Respondent due to the reason of not obtaining the consents under the Air/Water Acts because these consents as stated in the preceding paragraphs are not required at all for Sand mining operations.

Furthermore, the UPPCB, on a factually incorrect conclusion that no CTO was obtained by the answering Respondent, at any

point of time, has recommended an Environmental Compensation of Rs.79,59,31,375/- by assuming that the EC is automatically cancelled as soon as the Respondent has commenced his production without the valid consent. Since the CTO had been obtained, and is even otherwise not required in law, such Environmental Compensation on the total production carried out by the said mine is unwarranted, apart from being disproportionate, excessive and highly exorbitant.

It is trite to submit that this Hon'ble Tribunal has adopted the CPCB Methodology for Assessing Environmental Compensation in cases where CTO/ CTE is required under the Air/ Water Acts, which in a given case have not been obtained. Therefore, assuming that a CTO is required for Sand Mining activities, the recommendation for levying compensation on the *formulae* prescribed in *NGT Bar Association v. Virender Singh* is even otherwise, not applicable in the facts and circumstances of the present case.

A true copy of the Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and

Action Plan to Utilize the fund is hereby Annexed as **ANNEXURE A-13** at pages.**171-192**

ENVIRONMENTAL MANAGEMENT AND CSR PROGRAMES IMPLEMENTED/TO BE IMPLEMENTED BY THE ANSWERING RESPONDENT

This Hon'ble Tribunal vide its Order dated 01.03.2023 directed the Project Proponents to submit along with their reply, the Environmental Management and CSR Programmers implemented/to be implemented by them with details of works, timeline, budget, agency for implementation etc..

In context thereof, it is submitted that the Final EIA Report dated 04.07.2020 annexed herein by the Answering Respondent includes a detailed Environment Management Plan including specific issues like the soil quality, air quality, noise management, waste management etc. The said comprehensive EIA study further provides a detailed Corporate Environment Plan (CER) which includes socially and environmentally responsible business practices that balance financial profit with social well being, which the Answering Respondent had proposed to undertake with a budget of Rs.9,00,000 (2% of the

project cost) over a period of 5 years. The EIA Report also contains details of works, timeline, budget, agency for implementation etc. The Answering Respondent seeks to refer and rely on the Final EIA Report dated 04.07.2020 for the same.

A true copy of the Final EIA Report dated 04.07.2020 is annexed hereby as **ANNEXURE A-14**at pages.**193-446**

In view of the abovementioned facts and circumstances, the answering Respondent submits that the present OA be dismissed qua the Answering Respondent.

Filed by:

[VANSHDEEP DALMIA]
Advocate for the Answering Respondent,
Shri Shailendra Yadav

Place: New Delhi
Filed on: 23.04.2023

BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 393 OF 2023

IN THE MATTER OF:

ASHISH KUMAR DWIVEDI ...APPLICANT

VERSUS

STATE OF U.P. & ORS. ...RESPONDENTS

AFFIDAVIT

I, Shailendra Yadav, S/o Naipal Singh, Kaushal Colony, Malli bamori, damavadhunga, Haldwani, Nainital, Uttarakhand – 263139 do hereby solemnly affirm and declare as under:-

1. I say that I have been impleaded as a Respondent by this Hon'ble Tribunal in the above mentioned matter and am well conversant with the facts and circumstances of the case and competent to depose the present Affidavit.

2. I say that I have read and understood the contents of the accompanying Reply has been drafted on my instructions and I say that the facts stated therein are true to my knowledge.

3. I say that the averments of facts stated herein above are true to my knowledge, no part of it is false and nothing material has been concealed therefrom.

DEPONENT

NOTARY A.N. SINGH Supreme Court of India Regn. No. 16959 Exp. Date: 31.01.2025 GOVT. OF INDIA

VERIFICATION:-

20 APR 2023

Verified at New Delhi on this 20th day April, 2023, that the contents of the present affidavit are true and correct to my knowledge, no part of it is false and nothing material has been concealed therefrom.

DEPONENT

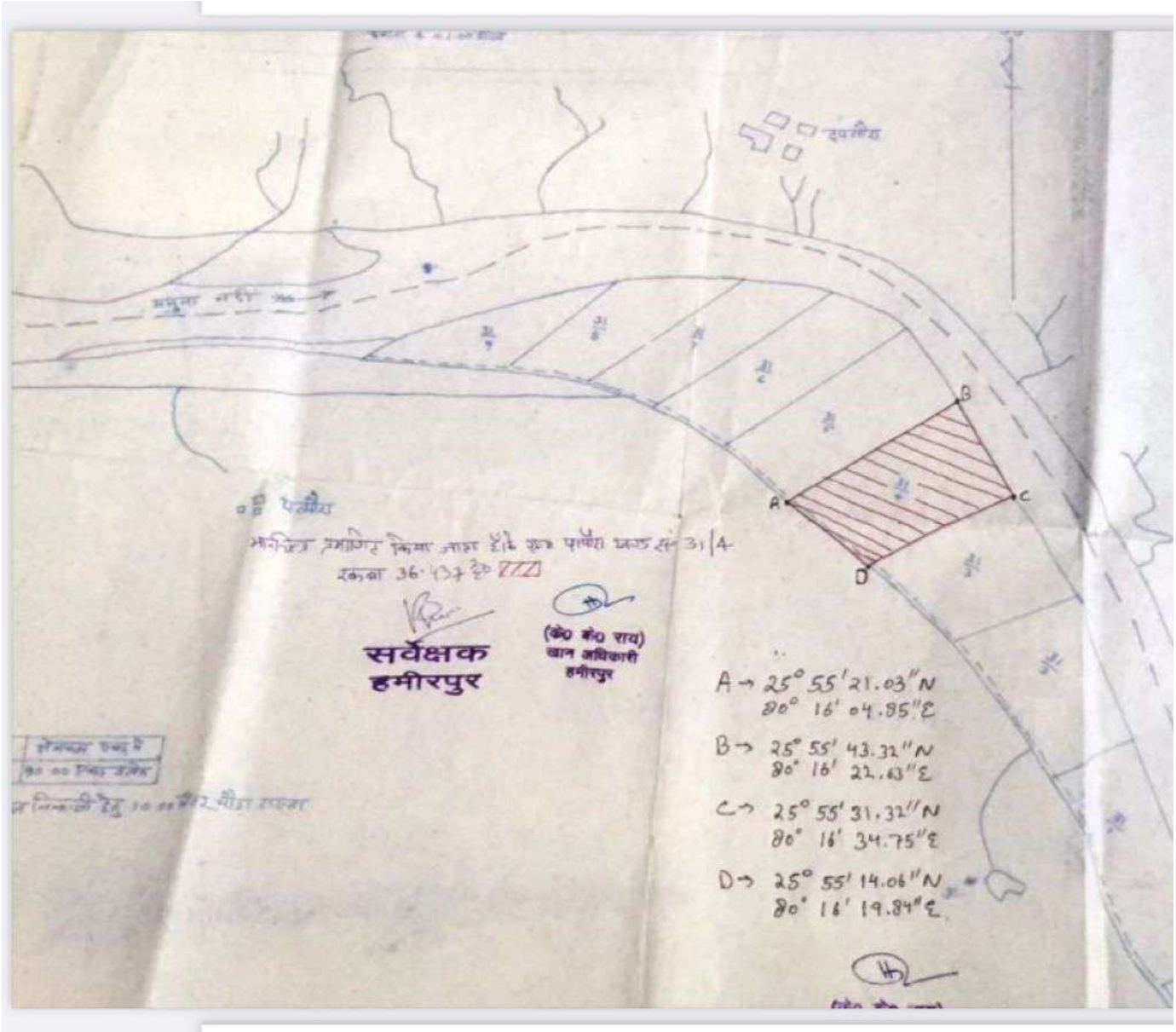
I Identify the deponent who has Signed/Put T.I. in my presence

ATTESTED
A.N. Singh, Adv.
Notary Public
Govt. of India, Delhi
Mob.: 9718139591, 7982539115

20 APR 2023

NOTARY
A.N. SINGH
Supreme Court of India
Regn. No. 16959
Exp. Date: 31.01.2025
GOVT OF INDIA

ANNEXURE A-1


सर्वेक्षक
हमीरपुर
(के० के० राय)
खान अधिकारी
हमीरपुर
A → 25° 55' 21.03" N
80° 16' 04.85" E
B → 25° 55' 43.32" N
80° 16' 22.63" E
C → 25° 55' 31.32" N
80° 16' 34.75" E
D → 25° 55' 14.06" N
80° 16' 19.84" E

ANNEXURE A-2

कार्यालय जिलाधिकारी, हमीरपुर
(खनन अनुभाग)

संख्या– 614 /खनिज–एम0एम0सी–तीस–विविध (2018–19) दिनांक– 16 जुलाई, 2018

कलस्टर प्रमाण पत्र

प्रमाणित किया जाता है कि श्री शैलेन्द्र यादव निवासी कौशल कालौनी मल्ली बमौरी पोस्ट दमवाडुंगा तहसील हल्द्वानी जिला नैनीताल (उत्तराखण्ड) को पत्रांक–421/खनिज–एम0एम0सी–तीस–विविध (2018–19) दिनांक–07.06.2018 के माध्यम से गाटा संख्या/खण्ड संख्या–31/4 ग्राम–पत्यौरा तहसील व जनपद हमीरपुर हेतु कुल 36.437 हे0 खनन क्षेत्र के सम्बन्ध में सहमति पत्र (एल0ओ0आई0) निर्गत किया गया है। अधोहस्ताक्षरी द्वारा पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार की ई0आई0ए0 अधिसूचना–2006 (यथासंशोधित) /ई0आई0 ए0 अधिसूचना–15.01.2016 के परिशिष्ट–11 में दिये गये प्राविधानों के अन्तर्गत उक्त खनन क्षेत्र का परीक्षण किया गया, जिसके अनुसार प्रश्नगत खनन क्षेत्र की स्थिति निम्नवत है :–

द) प्रश्नगत खनन क्षेत्र की परिधि से 500 मीटर दूरी में निम्नांकित खनन क्षेत्र स्वीकृत है :–

1– खण्ड संख्या–31/5 ग्राम पत्यौरा खनन क्षेत्र 36.437 हेक्टेअर

उक्त खनन क्षेत्रों का कुल योग–72.874 हे0 है जो कि 50 हे0 से अधिक है। सम्बन्धित प्रकरण ई0आई0ए0 अधिसूचना की श्रेणी बी–1 से आच्छादित होता है।

यह भी प्रमाणित किया जाता है कि उपरोक्त विवरण में ई0आई0ए0ए0 भारत सरकार /एस0ई0आई0ए0ए0/डी0ई0आई0ए0ए0 से निर्गत पूर्व– पर्यावणीय क्लीयरेन्स के गाटा/खण्ड संख्या को सम्मिलित कर लिया गया है एवं उक्त प्रमाण पत्र ई0आई0ए0 अधिसूचना 2006 (यथासंशोधित)/अधिसूचना–15.01.2016 के परिशिष्ट–11 के प्राविधानों के अनुसार है।

16/7/18

(के0के0 राय)
खान अधिकारी,
हमीरपुर

Registered

State Level Environment Impact Assessment Authority, Uttar Pradesh

Directorate of Environment, U.P.

Vineet Khand-I, Gomti Nagar, Lucknow - 226 010
Phone : 91-522-2300 541, Fax : 91-522-2300 543
E-mail : deiaup@yahoo.com
Website : www.seiaup.com

ANNEXURE A-3

To,

Shri Shailendra Yadav,
Koushal Colony Malli Bmouri,
Post- Dambandunga,
Teshil- Haldani, District- Nainital.

Ref. No. 382 /Parya/SEIAA/4412/2019 Date: 13 October, 2020

Sub: Environmental Clearance for Sand/Morrum mining at Khand No.- 31/4, Village- Patyora, Tehsil & District-Hamirpur, U.P. (Leased area 36.437 ha.).

Dear Sir,

Please refer to your application/letter dated 24-07-2018, 26-07-2018, 04-07-2020, 22-07-2020 & 29-07-2020 addressed to the Secretary, SEAC, Directorate of Environment, U.P., Lucknow on the subject as above. The State Level Expert Appraisal Committee considered the matter in its meetings held on dated 29-07-2020 and SEIAA meeting 24-09-2020.

A presentation was made by the project proponent along with their consultant M/s Greencindia Consultant Pvt. Ltd. The proponent, through the documents submitted and the presentation made informed the committee that:-

1. The environmental clearance is sought for Sand/Morrum mining at Khand No.- 31/4, Village- Patyora, Tehsil & District-Hamirpur, U.P. (Leased area 36.437 ha.).
2. The terms of reference in the matter were issued by SEIAA, U.P vide letter no. 380/Parya/SEAC/4412/2018 dated 22/10/2018.
3. The public hearing was organized on 28/11/2019. Final EIA report submitted by the project proponent on 04/07/2020.
4. Salient features of the project as submitted by the project proponent:

1.	On-line proposal No.	SIA/UP/MIN/28394/2018
2.	File No. allotted by SEIAA, UP	4412
3.	Name of Proponent	Sri Shailendra Yadav
4.	Full correspondence address of proponent and mobile no.	Sri Shailendra Yadav Koushal Colony Malli Bmouri Post Dambandunga Tehsil: Haldani, Dist. Nainital
5.	Name of Project	Patyora (Khand No. 31/4) sand/morrum mine on Yamuna river
6.	Project location (Plot/Khasra/Gata No.)	Khand No. 31/4, Village -Patyora, Tehsil –Hamirpur, District -Hamirpur of Uttar Pradesh.
7.	Name of River	Yamuna River
8.	Name of Village	Patyora
9.	Tehsil	Hamirpur
10.	District	Hamirpur
11.	Name of Minor Mineral	Sand/Morrum
12.	Sanctioned Lease Area (in Ha.)	36.437
13.	Mineable Area (in Ha.)	29.70
14.	Zero level mRL	91 m
15.	Max. & Min. mRL within lease area	90.0-91.0
16.	Pillar Coordinates (Verified by DMO)	Point A: 25° 55' 21.03" N, 80° 16' 04.85" E Point B: 25° 55' 43.32" N, 80° 16' 22.03" E Point C: 25° 55' 31.32" N, 80° 16' 34.75" E

	D	25° 55' 14.06" N	80° 16' 19.84" E
17. Total Geological Reserves	12,55,880m^3		
18. Total Mineable Reserves in LOI	7,28,640m^3		
19. Total Proposed Production	36,43,200m^3 (for 5 years)		
20. Proposed Production/year	7,28,640 m^3/Year		
21. Sanctioned Period of Mine lease	5 Years		
22. Production of mine/day	2915m^3/day		
23. Method of Mining	Opencast Semi-mechanized mining		
24. No. of working days	250 days/ Year		
25. Working hours/day	12 Hours		
26. No. Of workers	180		
27. No. Of vehicles movement/day	324		
28. Type of Land	Govt. Land		
29. Ultimate Depth of Mining	2.6m		
30. Nearest metaled road from site	1500 m		
31. Water Requirement	PURPOSE	REQUIREMENT (KLD)	
	Drinking	1.80	
	Suppression of dust	7.20	
	Plantation	8.40	
	Others (if any)	-	
	Total	17.40	
32. Name of QCI Accredited Consultant with QCI No. and period of validity.	GreenCIndia Consulting Pvt Ltd.NABET/EIA/1922/RA0159 valid till 27/10/2022		
33. Any litigation pending against the project or land in any court	No		
34. Details of 500 m Cluster Map & certificate verified by Mining Officer	614/khanij. m.m.c. tees- vividh (2018-2019) dated 16.07.2018		
35. Details of Lease Area in approved DSR	Page – 61, Sl. No – 02		
36. Length and breadth of Haul Road	Length 1500 m, Width 6.0 m		
37. No of Trees	340 Trees		

5. The mining would be restricted to unsaturated zone only above the phreatic water table and will not intersect the ground water table at any point of time.
6. This project does not attract any of the general conditions applicable on mining projects specified in EIA Notification 14/09/2006.
7. The mining operation will not be carried out in safety zone of any bridge or embankment or in eco-fragile zone such as habitat of any wild fauna.
8. There is no litigation pending in any court regarding this project.
9. The project proposal falls under category–1(a) of EIA Notification, 2006 (as amended).

Based on the recommendations of the State Level Expert Appraisal Committee meeting held on 29-07-2020 on the above said project, the State Level Environment Impact Assessment Authority meetings held on dated 24-09-2020 has decided to grant the Environmental Clearance to the title project for collection of 7,28,640 m^3/Year is proposed lease area 36.437 ha subject to effective implementation of the following General Conditions and specific conditions:

General condition:

1. This environmental clearance is subject to allotment of mining lease in favour of project proponent by District Administration/Mining Department.
2. Forest clearance shall be taken by the proponent as necessary under law.
3. Any change in mining area, khasra numbers, entailing capacity addition with change in process and or mining technology, modernization and scope of working shall again require prior Environmental Clearance as per the provisions of EIA Notification, 2006 (as amended).
4. Precise mining area will be jointly demarcated at site by project proponent and officials of Mining/Revenue department prior to starting of mining operations. Such site plan, duly verified by competent authority along-with copy of the Environmental Clearance letter will be displayed on a

hoarding/board at the site. A copy of site plan will also be submitted to SEIAA within a period of 02 months.

5. Mining and loading shall be done only within day hours time.
6. No mining shall be carried out in the safety zone of any bridge and/or embankment.
7. It shall be ensured that standards related to ambient air quality/effluent as prescribed by the Ministry of Environment & Forests are strictly complied with. Water sprinklers and other dust control majors should be applied to take-care of dust generated during mining operation. Sprinkling of water on haul roads to control dust will be ensured by the project proponent.
8. All necessary statutory clearances shall be obtained before start of mining operations. If this condition is violated, the clearance shall be automatically deemed to have been cancelled.
9. Parking of vehicles should not be made on public places.
10. No tree-felling will be done in the leased area, except only with the permission of Forest Department.
11. No wildlife habitat will be infringed.
12. It shall be ensured that excavation of minor mineral does not disturb or change the underlying soil characteristics of the river bed /basin, where mining is carried out.
13. It shall be ensured that mining operation of Sand/Moram will not in any way disturb the, velocity and flow pattern of the river water significantly.
14. It shall be ensured that there is no fauna dependant on the river bed or areas close to mining for its nesting. A report on the same, vetted by the competent authority shall be submitted to the RO, PCB and SEIAA within 02 months.
15. Primary survey of flora and fauna shall be carried out and data shall be submitted to the RO, PCB and SEIAA within six months.
16. Hydro-geological study shall be carried out by a reputed organization/institute within six months and establish that mining in the said area will not adversely affect the ground water regime. The report shall be submitted to the RO, PCB and SEIAA within six months. In case adverse impact is observed /anticipated, mining shall not be carried out.
17. Adequate protection against dust and other environmental pollution due to mining shall be made so that the habitations (if any) close by the lease area are not adversely affected. The status of implementation of measures taken shall be reported to the RO, UPPCB and SEIAA and this activity should be completed before the start of sand mining.
18. Need-based assessment for the nearby villages shall be conducted to study economic measures which can help in improving the quality of life of economically weaker section of society. Income generating projects/tools such as development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such program me. The project proponent shall provide separate budget for community development activities and income generating programmes.
19. Green cover development shall be carried out following CPCB guidelines including selection of plant species and in consultation with the local DFO/Horticulture Officer.
20. Separate stock piles shall be maintained for excavated top soil, if any, and the top soil should be utilized for green cover/tree plantation.
21. Dispensary facilities for first-aid shall be provided at site.
22. An Environmental Audit should be annually carried out during the operational phase and submitted to the SEIAA.
23. The District Mining Officer should quarterly monitor compliance of the stipulated conditions. The project proponent will extend full cooperation to the District Mining Officer by furnishing the requisite data/information/monitoring reports. In case of any violations of stipulated conditions the District Mining Officer will report to SEIAA.
24. The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard & soft copies) to the SEIAA, the District Officer and the respective Regional Office of the State Pollution Control Board by 1st June and 1st December every year.
25. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation and Urban Local Body.
26. Transportation of materials shall be done by covering the trucks / tractors with tarpaulin or other suitable mechanism to avoid fugitive emissions and spillage of mineral/dust.

27. Waste water, from temporary habitation campus be properly collected & treated before discharging into water bodies the treated effluent should conform to the standards prescribed by MoEF/CPCB.
28. Measures shall be taken for control of noise level to the limits prescribed by C.P.C.B.
29. Special Measures shall be adopted to protect the nearby settlements from the impacts of mining activities. Maintenance of Village roads through which transportation of minor minerals is to be undertaken, shall be carried-out by the project proponent regularly at his own expenses.
30. Measure for prevention & control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion, if any, shall be carried-out with geo textile matting or other suitable material.
31. Under corporate social responsibility a sum of 5% of the total project cost or total income whichever is higher is to be earmarked for total lease period. Its budget is to be separately maintained. CER component shall be prepared based on need of local habitant. Income generating measures which can help in upliftment of poor section of society, consistent with the traditional skills of the people shall be identified. The programme can include activities such as development of fodder farm, fruit bearing orchards, free distribution of smokeless Chula etc.
32. Possibility for adopting nearest three villages shall be explored and details of civic amenities such as roads, drinking water etc proposed to be provided at the project proponent's expenses shall be submitted within 02 months from the date of issuance of Environment Clearance.
33. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Lucknow, SEIAA, U.P and UPPCB
34. Action plan with respect to suggestion/improvement and recommendations made and agreed during Public Hearing shall be submitted to the District mines Officer, concern Regional Officer of UPPCB and SEIAA within 02 months.
35. Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, if applicable to this project.
36. The proponent shall observe every 15 day for nesting of any turtle in the area. Based on the observations so made, if turtle nesting is observed, necessary safeguard measures shall be taken in consultation with the State Wildlife Department. For the purpose, awareness shall be created amongst the workers about the nesting sites so that such sites, if any, are identified by the workers during operations of the mine for taking required safeguard measures. In this regards the safety notified zone should be left so that the habitat/nesting area is undisturbed.
37. The project proponent shall undertake adequate safeguard measures during extraction of river bed material and ensure that due to this activity the hydro geological regime of the surrounding area shall not be affected.
38. The project proponent shall obtain necessary prior permission of the competent Authorities for withdrawal of requisite quantity of water (surface water and groundwater), required for the project.
39. Appropriate mitigative measures shall be taken to prevent pollution of the river in consultation with the State Pollution Control Board. It shall be ensured that there is no leakage of oil and grease in the river from the vehicles used for transportation.
40. Vehicular emissions shall be kept under control and regularly monitored. The vehicles carrying the mineral shall not be overloaded.
41. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. (MoEF circular Dated : 22-09-2008 regarding stipulation of condition to improve the living conditions of construction labour at site).
42. Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
43. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.

44. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Lucknow by e-mail.
45. The green cover development/tree plantation is to be done in an area equivalent to 20% of the total leased area either on river bank or along road side (Avenue Plantation).
46. Debris from the river bed will be collected and stored at secured place and may be utilized for strengthen the embankment.
47. Safety measures to be taken for the safety of the people working at the mine lease area should be given, which would also include measure for treatment of bite of poisonous reptile/insect like snake.
48. Periodical and Annual medical checkup of workers as per Mines Act and they should be covered under ESI as per rule.

Specific Conditions:

1. Directions/suggestions given during public hearing and commitment made by the project proponent should be strictly complied.
2. The project proponent shall obtain the forest clearance and permission of Central and State Government as per law under the provisions of Forest (conservation) Act, 1980 before the start of work.
3. If the proposed project is situated in notified area of ground water extraction, where creation of new wells for ground water extraction is not allowed, requirement of fresh water shall be met from alternate water sources other than ground water or legally valid source and permission from the competent authority shall be obtained to use it.
4. Before plantation in a selected area the soil testing should be done and species to be chosen accordingly.
5. At the time of operation, project proponent will comply with all the guidelines issued by Government of India/State Govt./District Administration related to Covid-19.
6. Environment management in according to environmental status and impact of the project.
7. Selection of plants for green belt should be on the basis of pollution removal index.
8. No mining activity should be carried out in-stream channel as per SSMMG, 2016.
9. Pakka motorable haul road to be maintained by the project proponent.
10. A separate Environmental Management Cell with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
11. Permission from the competent authority regarding evacuation route should be taken.
12. Project proponent should ensure survival of tree saplings. Mortality should be replaced from time to time.
13. Site Pit photographs should be submitted with date, time and point-coordinate within 15 days.
14. One month monitoring report of the area for air quality, water quality, Noise level. Besides flora & fauna should be examined twice a week and be submitted within 45 days for a record.
15. Provision for cylinder to workers should be made for cooking.
16. The capacity of trucks/tractor for loading purpose will be in tonnes as per Transport Department applicable norms and standard fixed by the Government.
17. Provide suitable mask to the workers.
18. Approach road kaccha is to be made motarable and tree saplings to be planted on both sides of the road.
19. Indigenous plants should be planted according to CPCB guidelines and in consultation with local Divisional Forest Officer.
20. The project proponent shall in 2 years conduct detailed replenishment study duly authenticated by a QCI-NABET accredited consultant, and the District Mines Officer.
21. Provision for two toilets and hand pumps should be made at mining site.
22. Drinking water for workers would be provided by tankers.
23. Mining should be done by Bar scalping methods extraction (typically 0.3 -0.6 m or 1 - 2 ft) as per sustainable sand mining management guidelines 2016.
24. A buffer/safe zone shall be maintained from the habitation as per mining guidelines.

25. Corporate Environmental Responsibility (CER) plan shall be prepared by the project proponent and the details of the various heads of expenditure to be submitted as per the guidelines provided in the recent CER notification No. 22-65/2017-IA.III dated 01/05/2018.
26. Health/Insurance card, Medical claim, regular health check-up camps, facilities shall be provided to the regular/temporary/Contractual or any base workers. Copy of receipt shall be produced to the Directorate of Environment along with the compliance report.
27. Measure for conservation of water through rainwater harvesting and cleaning and maintenance of natural surface water bodies of the nearby areas may be considered as one of the activity in CER.
28. The excavated mining material should be carried and transported in such a way that no obstruction to the free flow of water takes place. Suitable measure should be taken and details to be provided to concern Department.
29. Width of the haul road shall be more than 6 meter.
30. Submit annual replenishment report certified by an authorized agency. In case the replenishment is lower than the approved rate of production, then the mining activity / production levels shall be decreased / stopped accordingly till the replenishment is completed.
31. The project proponent shall ensure that if the project area falls within the eco-sensitive zone of National park/ Sanctuary prior permission of statuary committee of National board for wild life under the provision of Wildlife (Protection) Act, 1972 shall be obtained before commencement of work.
32. If in future this lease area becomes part of cluster of equal to or more than 25 ha. then additional conditions based on the EIA shall be imposed. The lease holder shall mandatorily follow cluster conditions otherwise it will amount to violation of E.C. conditions. If the certificate related to cluster provided by the competent authority is found false or incorrect then punitive actions as per law shall be initiated against the authority issuing the cluster certificate.
33. The Environmental clearance will be co-terminus with the mining lease period.
34. Project falling with in 10 KM area of Wild Life Sanctuary is to obtain a clearance from National Board Wild Life (NBWL) even if the eco-sensitive zone is not earmarked.
35. To avoid ponding effect and adverse environmental conditions for sand mining in area, progressive mining should be done as per sustainable sand mining management guidelines 2016.
36. Geo coordinates should be verified by Director, DGM/District Magistrate/Regional Mining Officer/NHAI and should be submitted to SEIAA/SEAC, Secretariat as earliest.
37. In case it has been found that the E.C. obtained by providing incorrect information, submitting that the distance between the two adjoining mines is greater than 500mt. and area is less than 25ha, but factually the distance is less than 500 mt and the mine is located in cluster of area equal or more than 25ha, the E.C issued will stand revoked.
38. The project proponent shall in 2 years conduct detailed replenishment study duly authenticated by a QCI-NABET accredited consultant, and the District Mines Officer which shall form the basis for midterm review of conditions of Environmental Clearance.
39. The mining work will be open-cast and manual/semi mechanized (subject to order of Hon'ble NGT/Hon'ble Courts (s)). Heavy machine such as excavator, scooper etc. should not be employed for mining purpose. No drilling/blasting should be involved at any stage.
40. It shall be ensured that there shall be no mining of any type within 03 m or 10% of the width which-ever is less, shall be left on both the banks of precise area to control and avoid erosion of river bank. The mining is confined to extraction of sand/moram from the river bank only.
41. The project proponent shall undertake adequate safeguard measures during extraction of river bank material and ensure that due to this activity the hydro-geological regime of the surrounding area shall not be affected.
42. The project proponent shall adhere to mining in conformity to plan submitted for the mine lease conditions and the Rules prescribed in this regard clearly showing the no work zone in the mine lease i.e. the distance from the bank of river to be left un-worked (Non mining area), distance from the bridges etc. It shall be ensured that no mining shall be carried out during the monsoon season.
43. The project proponent shall ensure that wherever deployment of labour attracts the Mines Act, the provision thereof shall be strictly followed.
44. The project proponent will provide personal protective equipment (PPE) as required, also provid adequate training and information on safety and health aspects. Periodical medical examination of the

workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.

45. The critical parameters such as PM10, PM2.5, SO2 and NOx in the ambient air within the impact zone shall be monitored periodically. Further, quality of discharged water if any shall also be monitored [(TDS, DO, pH, Fecal Coliform and Total Suspended Solids (TSS)].
46. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads.
47. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
48. The extended mining scheme will be submitted by the proponent before expiry of present mining plan.
49. Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for monitoring PM10, PM2.5, SO2 and NOx. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
50. Common road for transportation of mineral is to be maintained collectively. Total cost will be shared/worked out on the basis of lease area among users.
51. Proponent will provide adequate sanitary facility in the form of mobile toilets to the labours engaged for the project work.
52. Solid waste material viz., gutkha pouchs, plastic bags, glasses etc. to be generated during project activity will be separately storage in bins and managed as per Solid Waste Management rules.
53. Green area/belt to be developed along haulage road in consultation of Gram Sabha/Panchyat.
54. Natural/customary paths used by villagers should not be obstructed at any time by the activities proposed under the project.
55. Digital processing of the entire lease area in the district using remote sensing technique should be done regularly once in three years for monitoring the change of river course by Directorate of Geology and Mining, Govt. of Uttar Pradesh. The record of such study to be maintained and report be submitted to Regional office of MoEF, SEIAA, U.P. and UPPCB.
56. A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal. The clearance letter shall also be put on the website of the company.
57. State Pollution Control Board shall display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/Tehsildar's Office for 30 days.
58. The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the SEIAA at http://www.seiaaup.in and a copy of the same shall be forwarded to the Regional Office of the Ministry located in Lucknow, CPCB, State PCB.
59. The MoEF/SEIAA or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
60. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
61. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997.
62. Waste water from potable use be collected and reused for sprinkling.
63. During the school opening and closing time vehicle movement will be restricted.
64. A width of not less than 50 meter or 10% width of river can be restricted for mining activities from river bank. A condition can be imposed that mining will be done from river activities from river bank.

You shall also ensure that the proposed site is not a part of any no-development zone as required/prescribed/identified under law. In case of violation, this permission shall automatically deem to be

cancelled. Also, in the event of any dispute on ownership or land use of the proposed site, this clearance shall automatically deem to be cancelled.

Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

The above stipulated conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along-with their amendments and rules made there under and also any other orders passed by the Hon'ble Courts of Law relating to the subject matter.

The project proponent will have to submit approved plans and proposals incorporating the conditions specified in the Environmental Clearance within 03 months of issuance of this clearance. The SEIAA/MoEF reserves the right to revoke the environmental clearance, if conditions stipulated are not implemented to the satisfaction of SEIAA/MoEF. SEIAA may impose additional environmental conditions or modify the existing ones, if necessary.

This is to request you to take further necessary action in matter as per provisions of Gazette Notification No. S.O. 1533(E) dated 14/09/2006, as amended and send regular compliance reports to the authority as prescribed in the aforesaid notification.

(Ashish Tiwari)
Member Secretary, SEIAA

Ref. No...../Parya/SEIAA/4412/2019 Dated: As above

Copy for information and necessary action to:

1. The Principal Secretary, Environment, U.P. Govt., Lucknow.
2. Advisor, IA Division, Ministry of Environment, Forests & Climate Change, Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi.
3. Additional Director, Regional Office, Ministry of Environment & Forests, (Central Region), Kendriya Bhawan, 5th Floor, Sector-H, Aliganj, Lucknow.
4. The Member Secretary, U.P. Pollution Control Board, TC-12V, Paryavaran Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow.
5. District Magistrate, Hamirpur, U.P.
6. Director, Department of Geology & Mining, U.P. Lucknow.
7. Copy for Web Master/Guard file.

(Ashish Tiwari)
Member Secretary, SEIAA

UTTAR PRADESH POLLUTION CONTROL BOARD
Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010
Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com

CONSENT ORDER

Ref No. -
107746/UPPCB/Banda(UPPCBRO)/CTO/air/HAMIRPUR/2020

Dated : 23/10/2020

To ,

Shri SHAILENDRA YADAV
M/s MS SHAILENDRA YADAV
PATYORA (KHAND 31/4) SAND/MORRUM MINE LOCATED ATVILLAGE- PATYORA, TEHSIL- HAMIRPUR, DISTRICT- HAMIRPUR, STATEUTTARPRADESH (AREA- 36.437 HA),HAMIRPUR,210502
HAMIRPUR

Sub : Consent under section 21/22 of the Air (Prevention and control of Pollution) Act, 1981 (as amended) to M/s. MS SHAILENDRA YADAV

Reference Application No. 9863044 Dated : 23/10/2020

1. With reference to the application for consent for emission of air pollutants from the plant of M/s MS SHAILENDRA YADAV. under Air Act 1981. It is being authorised for said emissions, as per the standards, in environment, by the Board as per enclosed conditions .
2. This consent is valid for the period from 23/10/2020 to 31/12/2021 .
3. Inspite of the conditions and provisions mentioned in this consent order UP Pollution Control Board reserves its right and powers to reconsider/amend any or all conditions under section 21 (6) of the Air (Previntion and Controt of Pollution) Act, 1981 as amended.

This consent is being issued with the permission of competent authority .

For and on behalf of U.P. Pollution Control Board

Chief Environmental Officer (circle-2)

Enclosed : As above
(condition of consent):

Copy to: Regional Officer, UPPCB, Banda with direction to send the compliance report of CTO conditions on quarterly basis.

Chief Environmental Officer (circle-2)

U.P. Pollution Control Board

Dated : 23/10/2020

CONDITIONS OF CONSENT

1. This consent is valid only for the approved production capacity of Sand/Morrum-7.28,640 Cu Meter/Year.
2. This consent is valid only for products and quantity mentioned above. Industry shall obtain prior approval before making any modification in product/ process /fuel/ plant machinery failing which consent would be deemed void.

3(a) The maximum rate of emission of flue gas should not be more than the emission norms for the stacks.

3(b) Air Pollution Source Details.

Air Pollution Source Details					
S.No	**Air Polution Source**	**Type of Fuel**	**Stack No.**	**Parameters**	**Height**
1	Dust emission during manual mining, transportation and loading/unloading of Sand/Morrum.			Particulate Matter	water sprinkling system and Green Belt for controlling dust emission.

3(c) The emissions by various stacks into the environment should be as per the norms of the Board .

Emission Quality Details Detail			
S.No	**Stack No**	**Parameter**	**Standard**
1		Particulate Matter	Ambient Air Standard as per E(P) Act 1986.

4. Quantity of other pollutants should also be as per the norms prescribed by the Board/MOEF & CC/or otherwise mandatory .
5. The equipment for air pollution control system and monitoring ,as proposed by the industry and approved by the Board should be installed in their premises itself .
6. The modification or installation in the existing pollution control equipments should be done only by prior approval of Board .
7. The operation of air pollution control system and maintenance be done in such a way that the quantity of pollutants should be in accordance with the standards prescribed by the Board/MoEF & CC/or otherwise mandatory .
8. Unit should do provisions for fugitive emissions chimney/stack as per the norms of the Board/MOEF & CC/or otherwise mandatory .
9. The unit should submit the stack emissions monitoring report within one month from issuance of consent order along with the point wise compliance report of the consent order . Further quarterly monitering report should be submitted .

The Unit will file the renewal application at least 2 months prior to the expiry of this Order.

Specific Conditions:

1. This consent is valid for production of Sand/Morrum-7,28,640 Cu Meter/Year by opencast and manual mining in 36.437 hectare leased area at Khand No. 31/4, Village -Patyora, Tehsil Hamirpur, District-Hamirpur.
2. Mining unit shall comply with the conditions of Environmental Clearance issued by State Level Environment Impact Assessment Authority (SEIAA) vide letter no. 382/Parya/SEIAA/4412/2019 dated 13.10.2020 and submit its compliance report to UPPCB.
3. If the lease agreement expires prior to 31-12-2021, then the validity of this CTO shall stand expired simultaneously with the expiry of mining lease.
4. Unit shall develop and maintain green belt as per the conditions of Environmental Clearance.
5. Unit shall make water sprinkling arrangement through Tankers for dust suppression at different sources of dust emission during mining, transportation, loading and unloading of sand/morrum.
6. Unit should operate and maintain installed water sprinkler system effectively and continuously to achieve the standards prescribed under E(P) Rules, 1986.
7. Unit shall submit Ambient air monitoring reports of NABL accredited laboratory on quarterly basis to the Board.
8. All trucks, tractors used in transportation of sand/morrum shall be covered by canvas sheet to prevent dust emission.
9. Water will be sprayed after loading activity (if sand/morrum collected could be dry condition)
10. The dust suppression measures like water spraying will be done on the haul roads and working areas.
11. Industry should comply with the provisions of Hazardous and Other waste (Management & Trans boundary Movement) Rules 2016.
12. Solid waste should be disposed in such manner, so that no water, air and soil pollution takes place.
13. Industry shall abide by directions given by Hon'ble Court, MoEF&CC, Central Pollution Control Board and UPPCB for protection and safe guard of environment from time to time.
14. Consent fees if revised, shall be payable by industry from the date of its applicability.
15. Industry shall comply with the relevant provisions of Environmental Laws.
16. If closure order is issued by CPCB or UPPCB against the unit, then CTO issued earlier will remain suspended during the closure period and after ensuring the compliance and after revocation of closure order, the CTO will automatically be effective with additional conditions mentioned in the closure revocation order.
17.CTO fees of Rs.10000/- for year 2021 should be deposited within a months time.

Issued with the permission of competent authority .

For and on behalf of U.P. Pollution Control Board .

Chief Environmental Officer (circle-2)

UTTAR PRADESH POLLUTION CONTROL BOARD
Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010
Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com

CONSENT ORDER

Ref No. -
107748/UPPCB/Banda(UPPCBRO)/CTO/water/H AMIRPUR/2020

Dated : 23/10/2020

To ,

Shri SHAILENDRA YADAV
M/s MS SHAILENDRA YADAV
PATYORA (KHAND 31/4) SAND/MORRUM MINE LOCATED ATVILLAGE- PATYORA, TEHSIL- HAMIRPUR, DISTRICT- HAMIRPUR, STATEUTTARPRADESH (AREA- 36.437 HA),HAMIRPUR,210502
HAMIRPUR

Sub : Consent under Section 25/26 of The Water (Prevention and control of Pollution) Act, 1974 (as amended) for discharge of effluent to M/s. MS SHAILENDRA YADAV

Reference Application No :9863322 Dated :23/10/2020

1. For disposal of effluent into water body or drain or land under The Water (Prevention and control of Pollution) Act,1974 as amended (here in after referred as the act) M/s. MS SHAILENDRA YADAV is hereby authorized by the board for discharge of their industrial effluent generated through ETP for irrigation/river through drain and disposal of domestic effluent through septic tant/soak pit subject to general and special conditions mentioned in the annexure ,in refrence to their foresaid application .
2. This consent is valid for the period from 23/10/2020 to 31/12/2020 .
3. In spite of the conditions and provisions mentioned in this consent order UP Pollution Control Board reserves its right and powers to reconsider/amend any or all conditions under section 27(2) of the Water (Previntion and Controt of Pollution) Act, 1974 as amended .

This consent is being issued with the permission of competent authority .

For and on behalf of U.P. Pollution Control Board

Chief Environmental Officer (circle-2)

Enclosed : As above
(condition of consent):

Copy to: Regional Officer, UPPCB, Banda with direction to send the compliance report of CTO conditions on quarterly basis.

Chief Environmental Officer (circle-2)

U.P. POLLUTION CONTROL BOARD, LUCKNOW

Annexure to Consent issued to M/s.MS SHAILENDRA YADAV vide

Consent Order No. 9863322/ Water Dated : 23/10/2020

CONDITIONS OF CONSENT

1. This consent is valid only for the approved production capacity of Sand/Morrum-7,28,640 Cu Meter/Year.

2. The quantity of maximum daily effluent discharge should not be more than the following :

Effluent Discharge Details			
S.No	**Kind of Effulant**	**Maximum daily discharge,KL/day**	**Treatment facility and discharge point**
1	Domestic	13 KLD	Septic Tank

3. Arrangement should be made for collection of water used in process and domestic effluent separately in closed water supply system. The treated domestic and industrial effluent if discharged outside the premises, if meets at the end of final discharge point, arrangement should be made for measurement of effluent and for collecting its sample. Except the effluent informed in the application for consent no other effluent should enter in the said arrangements for collection of effluent. It should also be ensured that domestic effluent should not be discharged in storm water drain .

4(a) The domestic effluent should be treated in treatment plant so that the should be in conformity with the following norms dated treated effluent .

Domestic Effulant		
S.No	**Parameter**	**Standard**

4(b). The industrial effluent should be treated in treatment plant so that the treated effluent should be in conformity with the following norms. .

Industrial Effulant		
S.No	**Parameter**	**Standard**

5. Effluent generated in all the processes, bleed water, cooling effluent and the effluent generated from washing of floor and equipments etc should be treated before its disposal with treated industrial effluent so that it should be according to the norms prescribed under The Environment (Protection) Act,1986 or otherwise mandatory .

6. The other pollutant for which norms have not been prescribed, the same should not be more than the norms prescribed for the water used in manufacturing process of the industry .

7. The method for collecting industrial and domestic effluent and its analysis should be as per legal Indian standards and its subsequent amendments/standards prescribed under The Environment (Protection) Act, 1986.

8. The treated domestic and industrial effluent be mixed (as per the provisions of Condition No. 2) and disposed of on one disposal point. This common effluent disposal point should have arrangement for flow meter/V Notch for measuring effluent and its log book be maintained .

9. The Unit will file the renewal application at least 2 months prior to the expiry of this Order.

Specific Conditions:

1. This consent is valid for production of Sand/Morrum-7,28,640 Cu Meter/Year by opencast and manual mining in 36.437 hectare leased area at Khand No. 31/4, Village -Patyora, Tehsil Hamirpur, District-Hamirpur.
2. Mining unit shall comply with the conditions of Environmental Clearance issued by State Level Environment Impact Assessment Authority (SEIAA) vide letter no. 382/Parya/SEIAA/4412/2019 dated 13.10.2020 and submit its compliance report to UPPCB.
3. If the lease agreement expires prior to 31-12-2020, then the validity of this CTO shall stand expired simultaneously with the expiry of mining lease.
4. Unit shall develop and maintain green belt as per the conditions of Environmental Clearance.
5. Unit shall not withdrawal ground water for any industrial activity without obtaining necessary permission from CGWA.
6. Unit shall make water sprinkling arrangement through Tankers for dust suppression at different sources of dust emission during mining, transportation, loading and unloading of sand/morrum.
7. Unit should operate and maintain installed water sprinkler system effectively and continuously to achieve the standards prescribed under E(P) Rules, 1986.
8. The domestic effluent shall be treated through septic tank/soak pit. Industry shall maintain ZLD.
9. Industry should comply with the provisions of Hazardous and Other waste (Management & Trans boundary Movement) Rules 2016 and shall submit details of Hazardous waste disposal in Form-10.
10. Washing process of minerals shall not be permitted.
11. Industry shall abide by directions given by Hon'ble Court, MoEF&CC, Central Pollution Control Board and UPPCB for protection and safe guard of environment from time to time.
12. Consent fees if revised, shall be payable by industry from the date of its applicability.
13. Industry shall comply with the relevant provisions of Environmental Laws.
14. If closure order is issued by CPCB or UPPCB against the unit, then CTO issued earlier will remain suspended during the closure period and after ensuring the compliance and after revocation of closure order, the CTO will automatically be effective with additional conditions mentioned in the closure revocation order.

Issued with the permission of competent authority .

For and on behalf of U.P. Pollution Control Board .

Chief Environmental Officer (circle-2)

उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड
UTTAR PRADESH POLLUTION CONTROL BOARD

संदर्भ सं०
Ref. No : H84207 /C-2/NGT-07 /2022

दिनाँक
Date 16-11-22

To,

The Registrar,
Hon'ble National Green Tribunal,
Copernicus Marg, New Delhi.
E-mail - judicial-ngt@gov.in

Sub: Submission of Joint Committe Report in compliance of order dated 26.05.2022 and 10.10.2022 passed by Hon'ble National Green Tribunal in O.A. No. 393/2022 Ashish Kumar Dwivedi Vs State of Uttar Pradesh and Ors.

Sir,

In compliance of order dated 26.05.2022 and 10.10.2022 passed by Hon'ble National Green Tribunal in O.A. No. 393/2022 Ashish Kumar Dwivedi Vs State of Uttar Pradesh and Ors., the report of Joint Committee is enclosed herewith.

It is requested that the Joint Committee report may be presented before the Hon'ble Tribunal for kind consideration.

Encl: As above.

Yours faithfully,

(Rajendra Singh)
Chief Environmental Officer
(Circle-2)

टी.सी. - 12 वी, विभूति खण्ड, गोमती नगर,
लखनऊ - 226 010
दूरभाष : 0522-2720828, 2720831
फैक्स : 0522-2720764, 2720676
ई–मेल : info@uppcb.com
वेबसाइट : www.uppcb.com

T.C.-12 V, Vibhuti Khand, Gomti Nagar,
Lucknow - 226 010
Phone : 0522-2720828, 2720831
Fax : 0522-2720764, 2720676
E-mail : info@uppcb.com
Website : www.uppcb.com

REPORT OF THE JOINT COMMITTEE

In ref.

Order dated 26.05.2021, passed by the Hon'ble National Green Tribunal, Principal Bench, New Delhi in Original Application No. 393 of 2022,Ashish Kumar Dwivedi versus State of Uttar Pradesh &ors.

The Hon'ble National Green Tribunal, Principal Bench, New Delhi was pleased to constitute the following committee vide order dated 26.05.2021 passed in the above mentioned Original Application which run as under :-

> *".....7. The allegations made require due verification and immediate remedial action. Accordingly, we constitute a Joint Committee of representatives of Director, Mining and Geology, Government of Uttar Pradesh, CPCB, State PCB and District Magistrate, Hamirpur and direct the Joint Committee to meet within four weeks and* ***undertake site visits, look into the grievances of the applicant, allegations regarding illegal mining, violation of Consent Conditions, SSMG, 2016 and EMGSM, 2020*** *and take requisite action by following due process of law. The State PCB will be the Nodal agency for coordination and compliance. Factual and action taken report may be furnished within two months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF....."*

2. That in compliance of directions issued by the Hon'ble National Green Tribunal following members have been nominated in the Joint committee by the concerned Authorities :-

Sr	Name	Post
1	Shri Ramesh Chandra,	Additional District Magistrate (F/R) Hamirpur
2	Shri Jay Prakash	Joint Director Directorate of Geology and Mining U.P Lucknow
3	Shri Rajendra D Patil	Scientist-D, CPCB RD-Lucknow
4	Shri Rajendra Prasad	Regional Officer, UPPCB Banda
5	Shri Subhash Singh	Mines Officer Hamirpur (Additional member nominated by the District Officer Hamirpur.

3. The Committee conducted virtual meeting on 29.07.2022 and carried out field visits on 04/05.08.2022 and also meet with video conferencing on 28.10.2022. The committee visited four mining sites whereas, the site of other two lease areas could not be visited due to inapproachable conditions of the path

due to heavy rain. A total no. of Six project studied by the Committee, which detail mentioned here in under :-

Sl.	Village	Block no	Name of the lessee
1	Beri	Khand no 10/22	M/s Annapurna Udhyog
2	Bhendi Kharka	Khand no 23/7	M/s Pahlwan Traders
3	Bhendi Kharka	Khand no 23/13	M/s Kanha Construction Company
4	Chikasi	Khand no 24/13	Shri. Shrikant Gupta
5	Chikasi	Khand no 24/17	Shri. Anand Kumar Gupta
6	Pateyora	Khand no 31/4	Shri. Shailendra Yadav

All aforesaid lease hold areas were not in operation at the time of visit by the committee due to rainy period.

4. It has been informed by the Mines Officer Hamirpur to the committee that total 18 number of mining lease areas have been allotted in the district Hamirpur and all such included in the District Survey Report (herein after referred as DSR). The six mining lease areas in question are part of the DSR. Based on the information provided by the mining department Hamirpur the detail of said areas are already mentioned in paragraphs no 3.

5. That the Hon'ble National Green Tribunal was pleased to direct to look in to following aspects:-

(1) The grievances of the applicant.
(2) Allegation regarding illegal mining.
(3) Volition of consent condition.
(4) Volition of Sustainable sand mining guidelines 2016
(5) Implementation of Enforcement and Monitoring Guidelines for Sand Mining 2020

6. The Hon'ble National Green Tribunal vide its order dated 26.05.2022 was also pleased to direct for taking required action by following due process of law :-

7. That the grievance of the applicant are being mentioned as under :-

(i) That illegal sand mining activates are being conducted by various mining lease holders.

(ii) That the mining activities are being done in violation of the orders passed by this Hon'ble Tribunal and the applicable laws wherein mechanized processes and means are being used for extracting sand.

(iii) Further, sand is being extracted from the middle of the flowing river.

(iv) Mining is being conducted beyond the area of sanctioned lease.

(v) Forest areas are being exploited for mining without any Forest Clearance.

(vi) Digging is being done till a point that water erupts out of the ground in violations of the conditions prescribed in this regard.

(vii) Bridges and ways have been made across the river bed obstructing the same.

(viii) Co-ordinates are being changed by the mining department without issuance of modified lease area and in absence of Environment Clearance.

(ix) Mining activities are being conducted way beyond the shore of the river bed extending up to the neighbouring agricultural lands which are all prohibited and are in violation of law.

(x) That due to such illegal activities, grave harm is being caused to the river beds and its surroundings, effecting the overall ecology and the environment having serious implications for maintaining the integrity of the areas and of the entire Hamirpur District.

8. That under the provisions of law namely Mines and Mineral (Development& Regulation) Act, 1957 and The Uttar Pradesh Minor Minerals (Concession) Rules, 2021, EIA Notification dated 14.09.2016 (as amended time to time), Sustainable Sand Mining Guidelines, 2016 and Enforcement and Monitoring Guidelines for Sand Mining, 2020, the procedure for graining an area situate in river bed on mining lease and process of conducting the mining operation upon it are being mentioned as under :-

(a) The mining department of the District, have responsibility to identify any suitable area fit for mining of any minerals.

(b) Whenever any suitable area is identified then they seek the consent and no objection certificate (NOC) from the forest department.

(c) To evaluate the quantity of the available sand and morrum on the proposed site of the area.

(d) To mention the detail of the area in the District survey report (DSR) and to load it on the District portal for inviting objection of the public.

(e) If any objection is received then such objection must be resolved and thereafter copy of the such DSR is presented before the committee constituted by the Director Geology and Mining UP Lucknow.

(f) After getting approval on the DSR the such area can be published vide advertisement for grant of mining lease for a period of 05 year for inviting e-tender cum e-bid for per cubic meter from qualified and eligible person.

(g) If highest and satisfactory bid has been received then it may be accepted provisionally by the district officer and and letter of intent (LoI) may be also issued in favor of such highest and satisfactory bidder.

(h) The provisionally selected bidder must engage recognized person for preparation of mining plan and obtain the approval on the mining plan by the Director Geology and Mining UP Lucknow.

(i) After obtaining approval on mining plan for the competent authority applied for environmental clearance in SEIAA UP Lucknow and after obtaining environmental clearance (hereinafter referred as EC) the demarcation of the area is done and then the mining lease deed is executed in favor of such selected bidder.

(j) That after execution and registration of the deed, the procedure and norms for wining the sand & morrum are mention as under :-

  (a) Installment of CCTV/PTZ camera on the site.

  (b) Installment of way-bridge with integrated cyber station of DGM Lucknow.

  (c) To win the sand & Morrum on the river bed site allotted in his favor as demarcated with the help of two permanent signs as well as supported by 'Geo Co-ordinates'.

  (d) The depth of pits are not more than three miters or water level, whichever is earlier.

  (e) Mining work will be started after sun rise& will be closed before the sunset by way of in accordance with the procedure as described in the approved mining plan.

  (f) No hurdle shall be created in the river stream by making bridge or temporary road.

  (g) Loading of the sand & morrum will be done by manually or with the help of machine which height and bucket is permitted by the law.

  (h) In the lease hold area, no garbage or liquid oil will be drop which polluting the site and stream water.

(i) Proper shed and toilet will be buildup for use of labour and other persons.

9. That under the provisions of Enforcement and Monitoring Guidelines for Sand Mining, 2020 the regular monitoring is necessary by a committee constituted by the concerned district officer.

10. The point wise, opinion of the joint committee on the allegation alleged by the applicant are being mentioned as under :-

Sl. No.	Allegation of the applicant	Opinion of the joint committee
1	That illegal sand mining activates being conducted by various mining lease holders	It is not a true allegation however some lessee has violated the term and condition of the EC and mining lease, but the district administration regularly monitoring the lease hold area and issue the notice to such violator and imposed the penalty in according with law. It is Submitted that E.C. provides that all necessary statutory clearance shall be obtained before the start of mining operations however the project proponent have not obtain the consent under the water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. It submitted that out of six lessees four lessees have obtained consent in present and two lessees namely M/s Shailendra Yadev and M/s Shrikant Gupta have not obtained consent in present from UPPCB. Hence, it is recommended that all lessees shall obtain consent under said Act, 1974 and Act, 1981.
2	That the mining activitiesare being done in violation of the orders passed by this Hon'ble Tribunal and the applicable laws wherein mechanized processes and means are being used for	At the time of visit the mining areas were submerged hence it is not possible to the committee to take the notice regarding using of prohibited machines on the river bed, there for this allegations is also not proved.

	extracting sand.	
3	Further, sand is being extracted from the middle of the flowing river	At the time of visit areas were submerged hence no sign has been appeared regarding extracting from the middle of flowing river.
4	Mining is being conducted beyond the area of sanctioned lease	The lessees are doing mining operation within the area sanctioned and demarcated in their favour with the help of two permanent points mentioned in map.
5	Forest areas are being exploited for mining without any Forest Clearance	As per record no forest area of land is included in the mining lease hold area and mining leases have been granted after obtaining of the NOC of the forest department. No complaint of such type has been received from forest department.
6	Digging is being done till a point that water erupts out of the ground in violations of the conditions prescribed in this regard	At the time of visit areas were submerged hence no proof has been paired to support the allegation of the applicant.
7	Bridges and ways have been made across the river bed obstructing the same	At the time of visit areas were submerged hence no proof has been paired to support the allegation of the applicant.
8	Coordinates are being changed by the mining department without issuance of modified lease area and in absence of Environment Clearance	Reply as mentioned in point no 4 of this table and further repeated that areas demarcated with the two permanent point available on the nearby.
9	Mining activities are being conducted way beyond the shore of the river bed extending up to the neighbouring agricultural lands which are all prohibited and are in violation of law	The mining activities from outside the sanctioned area was reported in the project of M/s Kanha Construction Company(23/13) & M/s Annapurna Udhyog (10/22) which also deal in accordance with law by compounding the offence by the lessee.
10	That due to such illegal activities, grave harm is being caused to the river beds and its surroundings, effecting the overall ecology and the environment having serious implications for	At the time of visit areas were submerged hence no proof has been appeared to support the allegation of the applicant.

	maintaining the integrity of the areas and of the entire Hamirpur District.	
11	Plantation and corporate Social Responsibility.	The Mines Officer, Hamirpur further informed that the lease holder also contribute for the plantation known as 'Sunder Van' and also distribute cloths, blankets and food to the nearby persons as per corporate Social responsibility.

11. That in view of aforesaid status report of the mining areas in question the committee it think just and proper to make following recommendations to monitor the mining areas after rainy season whenever the areas become vacant from the river water :-

(a) The lessees will be not allowed to win the sand & morrum unless the sanctioned area become dry from the river water.

(b) Before permitting the lessees for doing mining, the area again demarcated by two permanent signs with supporting geo co-ordinate and lessee should also compel to make the demarcation pillars and also maintain it till the mining operation are done.

(c) Time of the wining of minerals must be after sun rise and before sunset.

(d) No lessees do the mining operation with help of heavy prohibited machineries.

(e) According to term & condition of the EC proper arrangement of the employees or the labors made by the lessee and also invest part of the profit of the project in social reform in the nearby leased hold area.

(f) Air & water consent must be obtain from the UP Pollution Control Board as per law and regularly status report will be submitted in the regional office of the UPPCB.

Subhash Singh, Mines Officer-Hamirpur (Additional member nominated by DM)	**Rajendra Prasad, Regional Officer, UPPCB Banda**	**Rajendra D Patil, Sci – D CPCB Regional Directorate, Lucknow**	**Jay Prakash, Joint Director Directorate of Geology and Mining U.PLucknow**	**Ramesh Chandra, Additional District Magistrate (F/R) Hamirpur**
		*	11/11/22	11.11.2022

Date- 11.11.2022

* Partially agree with Point No 10 & 11. Additional observations are attached below separately.

11.11.2022

Additional observations of the member representing CPCB in the matter of Hon'ble NGT order (Original Application No. 393/2022, Ashish Kumar Dwivedi Vs State of Uttar Pradesh & Ors)

1. **Issues related to Cluster mining**

1.1. As per the records provided by District Mining Officer (DMO), multiple cluster certificates have been issued to these mining projects:

Khand No.	Name Project Proponent/Project	Cluster Certificates		EC issued on
		No	Issuing Dates	
10/22	M/s Annapurna Udhyog	03	12.06.2018	14.12.2021
			28.02.2019	
			10.12.2020*	
23/7	M/s Pahlwan Traders	01	17.12.2019	24.11.2018
23/13	M/s Kanha Construction Company	01	02.04.2018*	24.11.2018
24/13	Shri. Shrikant Gupta	05	25.08.2018	12.12.2019
			12.09.2018	
			28.02.2019	
			28.08.2019*	
			08.01.2021	
24/17	Shri. Anand Kumar Gupta	03	12.06.2018	08.02.2020
			13.02.2019	
			03.01.2020*	
31/4	Shri. Shailendra Yadav	02	16.07.2018*	13.10.2020
			30.07.2020	

* Cluster certificate considered while issuing the EC.

1.2. Following is some of the observations based on the table given above

1.2.1. The EC is issued to M/s Pahlwan Traders without considering the cluster certificate and cluster certificate is been issued after grant of EC.

1.2.2. It has been informed by the mining office that except the two cluster certificates remaining have been issued in order to comply with the amendments in the Notifications.

1.2.3. In case of Shri. Shailendra Yadav, the cluster certificate issued in 2018 was considered while issuing the EC instead of the cluster certificate issued in 2020. In the considered cluster certificate only one project is mentioned within the 500 m distance whereas in the cluster certificate just issued just before the issuing the EC four mining projects are shown withing the 500 m distance.

1.3. In the cluster certificates issued by the Mining Department the following numbers of mining projects are situated within the distance of 500 m from the concerned mining lease.

Mining Project	Mining project within 500 m indicated in the concerned cluster certificates		
	No of adjacent projects	Lease area of the adjacent projects	Total lease area including the mining project
M/s Pahlwan Traders	05	121.454 ha	133.599 ha
M/s Kanha Construction Company	03	72.872 ha	85.017 ha

Mining Project	Mining project within 500 m indicated in the concerned cluster certificates		
	No of adjacent projects	Lease area of the adjacent projects	Total lease area including the mining project
M/s Annapurna Udhyog	03	122.67 ha	159.107 ha
Shri. Shailendra Yadav	04	182.185 ha	218.622 ha
Shri. Shrikant Gupta	02	86.874 ha	123.311 ha
Shri. Anand Kumar Gupta	01	36.437 ha	72.874 ha

The details of all the project proponents falling in the cluster category in the area is given in the **Annexure 01.**

1.4. As per The Ministry of Environment, Forest and Climate Change Notification dated 14th August, 2018, if, Cluster of mine leases of area ≥ 25 hectares with individual lease size ≤ 100ha in that case requirement of Form –I, PFR, DSR and Approved Mine Plan and one EIA/EMP for all leases in the Cluster has been imposed.

1.5. Following conditions have been mentioned under the heading of 'specific conditions' in the ECs issued to these projects

1.5.1. *If in future this lease area becomes part of cluster of equal to or more than 25 ha. then additional conditions based on the EIA shall be imposed. The lease holder shall mandatorily follow cluster conditions otherwise it will amount to violation of E.C. conditions. If the certificate related to cluster provided by the*

competent authority Is found false or incorrect then punitive actions as per law shall be Initiated against the authority issuing the cluster certificate.

1.5.2. *In case it has been found that the E.C. obtained by providing incorrect information, submitting that the distance between the two adjoining mines is greater than 500 mt. and area is less than 25ha, but factually the distance is less than 500 mt and the mine Is located in cluster of area equal or more than 25ha, the E.C issued will stand revoked.*

2. **Issues related to mismatching of co-ordinates of the lease area**

2.1. The lease areas allotted to M/s Pahlwan Traders, M/s Kanha Construction Company and Shri. Shailendra Yadav is in totality different than the lease area sanctioned through Environmental Clearance (EC). Allotted lease areas are situated towards mid-stream of the river whereas the sanctioned lease areas are situated towards bank of the river. The map showing the difference in sanctioned area and allotted area is attached at **Annexure 02.**

2.2. The minor changes in the co-ordinates mentioned in EC with the co-ordinates mentioned in the demarcation report has been found for mine of M/s Anand Kumar Gupta.

2.3. It has been informed that the mining area allotted to Shri Shrikant Gupta has been revised and only 14.0 Ha lease area has been allotted

against the 36.43 Ha mentioned in the EC considering the Bridge of Bundelkhand Expressway passing through the sanctioned area.

2.3.1. The said lease area is located at a distance of approx. 250 m from the edge of the bridge.

2.3.2. The condition mentioned in EMGSM, 2020 in this regard is *'Sand and gravel shall not be extracted up to a distance of 1 kilometer (1 km) from major bridges and highways on both sides, or five times (5x) of the span (x) of a bridge/public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.'*

2.3.3. Considering the 35 m span length of the bridge the distance of the allotted area from the bridge seems to be in accordance with the provision of EMGSM, 2020.

2.4. The mining officer informed that the lease areas have been identified only through the Khand Numbers and the GPS coordinates were not mentioned in the LoI. The lease areas have been allotted on the basis of the identified Khand numbers.

2.5. However, the condition in the EC says, *'Any change in mining area, khasra numbers, entailing capacity addition with change in process and or mining technology, modernization and scope of working shall again*

require prior Environmental Clearance as per the provisions of EIA Notification, 2006 (as amended)'.

3. Issues related to in-stream mining

3.1. The lease areas (sanctioned and allotted) of M/s Annapurna Udhyog (10/22) and Shri. Anand Kumar Gupta (24/17) are situated throughout the river stream section. Whereas the in-stream mining is prohibited through the various guidelines. The map showing the allotted lease area across the river is attached at **Annexure 03.**

3.2. It has been informed that, the instructions for not to conduct excavation in the active river stream has been mentioned in the lease deeds.

3.3. In the inspections carried out by mining office, a temporary bridge across the river stream was found constructed by M/s Annapurna Udyog (10/22) and the said temporary bridge has been dismantled as well as penalty has also been imposed for the same by mining office.

4. Issues related to excess mining and use of heavy machinery

4.1. The details of the production carried out by these mines along with daily production data have been requested from the office of DMO. However, the DMO has provided annual data and very limited daily production data. Hence, the observations are based on the limited data made available by DMO. Copy of the provided production data is attached at **Annexure – 04.**

4.2. The provided production data reveals that these mine projects are generally complying the prescribed annual limit. However, these mines are violating the daily production limit set through the the environmental clearance.

Khand No.	Daily production Data Duration	Sanctioned Excavation limit/day (m^3/day)	Maximum Production reported in a Day (m^3/day)	Exceedance in times w. r. t. daily production limit
23/7	08.12.2021 to 30.06.2022	706.56	3310	4.7
23/13	09.12.2021 to 30.06.2022	706.56	9126	12.9
31/4	07.01.2022 to 31.05.2022	2915	6288	2.2
24/13	02.01.2022 to 30.06.2022	2650	4068	1.5
24/17	16.03.2022 to 30.06.2022	2914	9509	3.3
10/22	02.01.2022 to 31.06.2022	2332	6288	2.7

4.3. All the mines are carrying out excavation higher than the permitted daily quantity. The exceedance is even upto 12.9 times higher than the permitted daily limit.

4.4. The excavations at such higher rate have very adverse environmental impacts. Similarly, it indicates the possibility of use of heavy machinery by these mine proponents.

4.5. The mining office has also imposed fine to the two project proponents namely M/s Kanha Construction Company and M/s Sri Anand Kumar

Gupta for using the heavy machinery for the mining activities. This also supports the observation made at 4.4 above.

4.6. The use of excavator has not been allowed under semi mechanized condition in the EC issued to these projects. However, the mining plan of some of the projects are showing the use of excavator for mining purpose.

4.7. It has been informed by DMO that the use of excavator is permitted by the Director, Mining Department, UP vide letter dated 21.06.2019 which was issued in accordance with Hon'ble NGT order in the matter of OA No. 44/2016. However, the condition of EC and said letter regarding use of excavator for the mining activities is contradictory to each other.

5. Issues related to mining in agriculture and forest land

5.1. It has been informed that the lease areas are not allotted without obtaining the NOC from the forest department and no agriculture land is located in the allotted mining areas.

5.2. During the visit, the mining operations were found closed due to rainy season and hence the status regarding the above could not be get verified physically.

6. Issues related to illegal mining

6.1. The mining office has imposed fine for mining outside the lease area to 03 mines namely M/s Annpurna Udhyog, M/s Kanha Construction Company and M/s Pehlwan Traders and also imposed fine for violation

of mining depth to 02 mines namely M/s Kanha Construction Company and M/s Pehlwan Traders.

6.2. With the help of Google Earth software, the status of illegal mining is tried to be verified. Several excavation pits are visible in this river streams. Irrespective of several requests made to DMO for providing the details of the mine lease allotted in district Hamirpur, the location details of only six mines have been made available.

6.3. Hence, the location details have been acquired from the environmental clearance web-portal and analysed through Google Earth. Following is some of the findings based on the Goggle Earth images of the month February 2022.

6.3.1. Around 77 illegal excavated pits are visible in the stretch of river Betwa. Similarly, 28 haulage/ intersecting tracks are also visible in and around these pits.

6.3.2. Excavator machines and Trucks/Tippers were seen on these Haul Roads.

6.3.3. Most of the illegal pits are located around the mining projects namely M/s Kanha Construction Company and Shri. Shrikant Gupta.

6.3.4. The physical verification of these illegal pits now may not be possible considering the replenishment during the Monsoon season 2022.

6.3.5. The details and representative Google Earth images are attached at **Annexure – 05.**

6.3.6. The above-made observations based on the digital satellite images are indicative of the extent of illegal mining in the stretch of River Betwa in the Hamirpur district. However, these need to be further verified through the concerned agencies and need to develop a mechanism to control these activities.

7. Compliance of EC conditions

7.1. In the EC issued to these projects, the condition prescribed as *'All necessary statutory clearances shall be obtained before start of mining operations. If this condition is violated, the clearance shall be automatically deemed to have been cancelled'.*

7.2. Under Section 25 of Water (P&CP) Act, 1974, the restrictions on new outlets and new discharges are imposed without obtaining valid Consent from the State Pollution Control Board. The referred section of the Act is reproduced below.

"1[(1) Subject to the provisions of this section, no person shall, without the previous consent of the State Board, --

(a) establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or an extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land (such discharge being hereafter in this section referred to as discharge of sewage); "

7.3. However, no mining projects had valid consents under Water & Air Acts at the time of commencement of production. And hence the EC issued can deem to be stands canceled in absence of valid Consent under the Water Act.

7.4. The following conditions prescribed in the EC are also not been complied by these lease holders

7.4.1. *The green cover development/tree plantation is to be done in an area equivalent to 20% of the total leased area either on river bank or along road side (Avenue Plantation).*

However, no such planned plantation has been observed along the approach road sides.

7.4.2. *Vehicular emissions shall be kept under control and regularly monitored. The vehicles carrying the mineral shall not be overloaded.*

Whereas the mining office has issued several penalties to these projects for overloading which indicates the said condition is not been followed.

7.4.3. *Permission from the competent authority regarding evacuation route should be taken.*

The details of such permission are not available.

7.4.4. The conditions mentioned regarding environmental Audit, environmental statement etc. are also not been strictly complied with.

7.5. The EC condition also says *'Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986'.*

7.6. The clause of the EC also says *'The District Mining Officer should quarterly monitor compliance of the stipulated conditions. The project proponent will extend full cooperation to the District Mining Officer by furnishing the requisite data/information/monitoring reports. In case of any violations of stipulated conditions the District Mining Officer will report to SEIAA.'*

However, compliance with the stipulated conditions not seems to be strictly monitored and verified.

7.7. Copy of one of the EC is attached for ready reference at **Annexure - 06**

8. Compliance of Consent conditions

8.1. It has been informed that none of the mining project has valid consent at the time of commencement of the production.

8.2. Later some of the mining projects have obtained the consents from UPPCB.

8.3. Two mining projects namely, M/s Sri Shailendra Yadav & Shri. Srikant Gupta have yet not obtained the consents under the Water & Air Acts from the UPPCB.

9. Compliance of Sustainable Sand Mining Management Guidelines (SSGM) - 2016 and Enforcement & Monitoring Guidelines for Sand Mining (EMGSM) - 2020

9.1. As stated above in the report, the mining projects are not strictly complying with the provisions of SSMG, 2016 and EMGSM, 2020. The following are some of the major non-compliances

9.1.1. The lease area is allotted across the river stream for 02 mining projects.

9.1.2. Construction of temporary bridges by some mines.

9.1.3. Overloading of vehicles.

9.1.4. Storage of sand in close proximity of the public roads.

9.1.5. In EMGSM 2020, the monitoring of the River Sand at the reach/stock-yard level has been suggested in order to curb illegal mining. However, details of the sand storage areas requested for verification have not been provided by DMO.

10. Status of Corporate Social Responsibility (CSR) and Corporate Environmental Responsibility (CER).

10.1. The following are the conditions given in the EC in this regard

10.1.1. *Under corporate social responsibility a sum of 5% of the total project cost or total income whichever is higher is to be earmarked for total lease period. its budget is to be separately maintained. CER component shall be prepared based on need of local habitant. Income generating measures which can help in upliftment of poor section of society, consistent with the traditional skills of the people shall be identified. The program can include activities such as development of fodder farm, fruit bearing orchards, free distribution of smokeless Chula etc.*

10.1.2. However, no details are available with the mining office regarding the CSR activities carried out by the project proponents.

11. Environmental Compensation: Considering the reported non-compliances, Environmental compensation can be imposed on these mining proponents in accordance with the methodology accepted by Hon'ble NGT through its order in the matter of Original Application No. 360/2015 (National Green

Tribunal Bar Association Vs Virender Singh (State of Gujarat) dated 15.01.2021.

11.1. The Environmental compensation can be imposed for any of the following three reasons;

11.1.1. Compensation on the quantity exceeding the daily production limit.

11.1.2. Compensation for the number of days mine has been operated without valid consent from UPPCB.

11.1.3. Compensation on the entire quantity excavated assuming that the EC is automatically canceled as soon as they have started production without valid consent.

11.2. It is evident from the limited daily production data that these mines had carried out the excess production than the daily permitted limit. However, as the provided data is incomplete the compensation for the same could not be get calculated.

11.3. UPPCB has calculated the Environmental compensation for the period of operations of these mines without valid Consent. The calculation sheet is attached at **Annexure -07**. The calculated EC by UPPCB is as given

Khand No.	Name of the Project/Proponent	Calculated EC (in Rs)
23/7	M/s Pahlwan Trader	84,70,000/-

Khand No.	Name of the Project/Proponent	Calculated EC (in Rs)
23/13	M/s Kanha Construction Company	76,50,000/-
31/4	Shri. Shailendra Yadav	32,00,000/-
24/13	Shri. Shrikant Gupta	67,00,000/-
24/17	Shri. Anand Kumar Gupta	30,10,000/-
10/22	M/s Annapurna Udhyog	17,60,000/-

11.4. The environmental compensation is calculated by assuming the EC deemed automatically got cancelled as soon as they have commissioned their productions without valid consent. And in that case, all the operations conducted thereafter are without EC. And hence Environmental Compensation can be imposed on the total production carried out by these mines. The details of calculations in this regard are given in the **Annexure - 08**. The calculated Environmental Compensation is as tabulated.

Khand No.	Name of the Project/Proponent	Calculated EC (In Rs)
23/7	M/s Pahlwan Trader	90,69,26,805/-
23/13	M/s Kanha Construction Company	57,56,79,834/-
31/4	Shri. Shailendra Yadav	79,59,31,375/-
24/13	Shri. Shrikant Gupta	1,11,50,68,373/-
24/17	Shri. Anand Kumar Gupta	2,47,67,73,723/-
10/22	M/s Annapurna Udhyog	62,02,06,923/-

11.5. Any one of the three calculated compensation may be deemed suitable based on the prevailing guidelines and observations made in the report.

12. **Conclusion:** Considering the observations as listed above the following measures are suggested

12.1. The provisions of Environmental Clearance, SSMG, 2016 and EMGSM, 2020 is need to be strictly complied/imposed.

12.2. The mining production should not be allowed out without obtaining valid consents under Water & Air Acts from the SPCB.

12.3. The mine area across the river course should not be allotted to avoid the In-stream mining.

12.4. The GPS co-ordinates of sanctioned area should be matching with GPS co-ordinates of the allotted area. In case of any difference the amended EC should be obtained.

12.5. The production higher than the permitted daily production should not be allowed.

12.6. Strict vigilance and stringent action are required to be taken for stopping the illegal mining operations.

Committee member	Signature
Shri Rajendra D Patil, Sci – D CPCB Regional Directorate, Lucknow	11.11.2022
Date: 11.11.2022	

LIST OF ANNEXURES

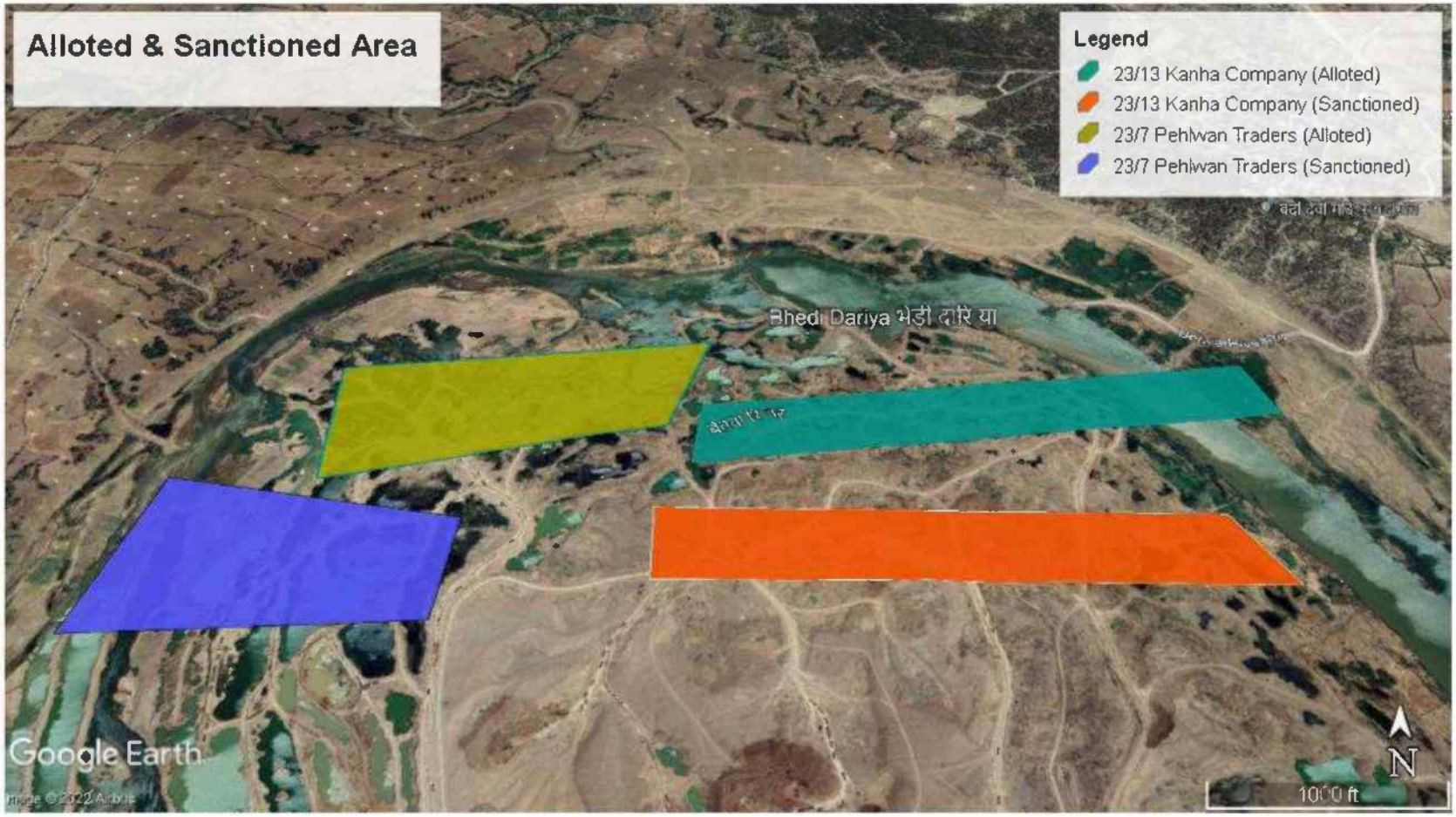
ANNEXURE – 01

Details of all Project Proponent falling in cluster category in the Cluster

CLUSTER	Sr. No.	Khand No.	Name of the Proponent	Total Lease Area of Cluster (ha.)
CLUSTER 01	1.	10/20	M/s Esteem Infra Build Pvt. Ltd, Village- Beri, Tehsil- Hamirpur	159.107
	2.	10/21	M/s Light House Construction Pvt. Ltd., Village- Beri, Tehsil	
	3.	10/22	M/s Annapurna Udhog, Khand No. 10/22, Beri	
	4.	23/26	M/s J K S Mining Services Pvt. Ltd., Village- Beri, Tehsil- Hamirpur,	
CLUSTER 02	5.	23/7	M/s Pahlwan Traders, Bhendi Kharka	133.599
	6.	23/8	M/s Chaudhary Trader, Village-Bhedi Kharaka, Tehsil- Sarila	
	7.	23/12	M/s Yadav and Sons, Village- Bhedi Kharka, Tehsil- Sarila,	
	8.	23/13	M/s Kanha Construction, Khand No. 23/13, Bhendi Kharka	
	9.	23/14	M/s Suresh Chandra Gupta, Village- Bhedi Kharka, Tehsil- Sarila	
	10.	23/16	M/s Prime Vision Industries Pvt. Ltd, Village-Bhedi Kharka, Tehsil- Sarila	
CLUSTER 03	11.	24/13	Shrikant Gupta, Khand No. 24/13, Chikasi	123.311
	12.	24/14	M/s Disha Enterprises located at 24/14, Village-Chikasi, Tehsil-Sarila,	
	13.	24/15	M/s Hardik Distrbutors Pvt. Ltd., Village Chikasi, Tehsil Sarila	
CLUSTER 04	14.	24/17	Shri Anand Kumar Gupta, Khand No. 24/17, (Old Khand No. 24/16), Chikasi	72.874
	15.	24/18	M/s Khajuraho Motors Pvt.Ltd, Village- Chikasi, Tehsil - Sarila,	
CLUSTER 05	16.	31/3	M/s Sharad Enterprises, Village Patyaura, Tehsil -Sadar,	218.622
	17.	31/4	Shri Shailendra Yadav, Khand No. 31/4, Pateyora	
	18.	31/5	M/s Vikas Enterprises, Village - Patyaura, Tehsil- Hamirpur,	
	19.	31/7	M/s Esteem Infra Build Pvt. Ltd., Village- Patyora, Tehsil- Hamirpur	
	20.	31/8	Shri Surendra Singh Chauhan, Project located at Village- Pateora, Tehsil & District- Hamirpur,	

ANNEXURE – 02

Images of showing difference between Allotted Area and Sanctioned Area




Alloted & Sanctioned Area
Legend
31/4 Shailendra Yadav (Alloted)
31/4 Shri Shailendra Yadav (Sanctioned)
Home Town
Rustampur रुस्तमपुर
Yamuna River
Pateora Daria पटेवरा दारि या
Google Earth
3000 ft
N

ANNEXURE – 03

Images showing Lease area allotted throughout the River Stream


Alloted & Sanctioned Area
Legend
10/22 Annapurna Udhyog (Alloted)
10/22 Annapurna Udhyog (Sanctioned)
Chhutka maharaj
Check dam
Google Earth
2000 ft
N

ANNEXURE – 04

Production data provided by the Mining Office

3-7-Details of all the mines in the district (covering minimum following aspects) to verify the condition of cluster mining and illegal mining.

SL No	Name of the proponent	Lease allotted on:	EC issued on	Date of commencement of production	Details of mines situated within 500 m	Sanctioned Lease area as per EC:	Allotted lease area	Production capacity	Year wise annual production along with copy of the annual returns	KML file of the lease area (sanctioned and allotted
1	Ms Pahlwan Treders, Khand no 23/7 Bhendi Kharka	08.12.2018	24.11.2018	11.12.2018	Khand no 23/8 Khand no 23/12 Khand no 23/13 Khand no 23/14 Khand no 23/16	12.145 hec	12.145 hec	1,94,304	08.12.2018 to 07.12.2019- 1,68,364 cum 08.12.2019 to 07.12.2020- 1,69,821 cum 08.12.2020 to 07.12.2021- 1,87,504 cum 08.12.2021 to 30.06.2022- 1,55,294 cum	Attached
2	Ms Kanha Construction Khand no 23/13 Bhendi Kharka	09.12.2018	24.11.2018	11.12.2018	Khand no 23/7 Khand no 23/8 Khand no 23/14	12.145 hec	12.145 hec	1,94,304	09.12.2018 to 08.12.2019- 1,04,908 cum 09.12.2019 to 08.12.2020- 35,944 cum 09.12.2020 to 08.12.2021- 1,72,593 cum 09.12.2021 to 30.06.2022- 1,18,815 cum	Attached
3	Ms Annpurna Udhog Khand no 10/22 Beri	02.01.2022	14.12.2021	05.01.2022	Khand no 10/20 Khand no 10/21 Khand no 23/26	36.437 hec	36.437 hec	5,82,912	02.01.2022 to 30.06.2022- 4,65,694 cum	Attached
4	Shri Shailendra Yadav Khand no 31/4 Pateyora	07.01.2021	13.10.2020	13.01.2021	Khand no 31/4 Khand no 31/5 Khand no 31/7 Khand no 31/8	36.437 hec	36.437 hec	7,28,640	07.01.2021 to 06.01.2022- 2,58,542 cum 07.01.2022 to 30.05.2022- 3,39,098 cum	Attached
5	Shrikant Gupta Khand no 24/13 Chikasi	02.01.2020	12.12.2019	09.01.2020	Khand no 24/14	14.00 hec	14.00 hec	2,79,962	02.01.2020 to 01.01.2021- 3,83,010 cum 02.01.2021 to 01.01.2022- 2,46,818 cum 02.01.2022 to 30.06.2022- 2,07,442 cum	Attached
6	Shri Anand Kumar Gupta Khand no 24/17 Chikasi	16.03.2020	08.12.2020	24.03.2020	Khand no 24/18	36.437 hec	36.437 hec	7,28,640	16.03.2020 to 15.03.2021- 7,24,697 cum 16.03.2021 to 15.03.2022- 6,74,795 cum 16.03.2022 to 30.06.2022- 4,60,240 cum	Attached

2- Daily production data of the mines in question to verify the status of compliance of the condition prescribed in the environmental clearance issued by SEIAA.

मै0 पहलवान ट्रेडर्स खण्ड नं0–23/7 ग्राम भेड़ी खरका तहसील सरीला जनपद हमीरपुर

पट्टा अवधि–08.12.2018 से 07.12.2023 तक

खनन प्रारम्भ करने का व बन्द होने का दिनांक–11.12.2018 से 30.06.2022

वित्तीय वर्ष–2021–22

क्र0सं0	दिनांक	प्रपत्र ई–एम0एम0–11 की संख्या	घन मीटर
1	08.12.2021	11	192
2	09.12.2021	45	792
3	10.12.2021	44	789
4	11.12.2021	44	808
5	12.12.2021	73	1312
6	13.12.2021	36	627
7	14.12.2021	51	902
8	15.12.2021	53	964
9	16.12.2021	53	923
10	17.12.2021	52	912
11	18.12.2021	58	1006
12	19.12.2021	37	669
13	20.12.2021	57	959
14	21.12.2021	22	395
15	22.12.2021	85	1428
16	23.12.2021	52	933
17	24.12.2021	76	1330
18	25.12.2021	54	889
19	26.12.2021	58	1025
20	27.12.2021	71	1245
21	28.12.2021	68	1140
22	29.12.2021	34	590
23	30.12.2021	15	266
24	31.12.2021	38	663
25	01.01.2022	68	1109
26	02.01.2022	23	405
27	03.01.2022	41	658
28	04.01.2022	76	1315
29	05.01.2022	74	1238
30	06.01.2022	02	38

31	07.01.2022	11	204
32	08.01.2022	07	125
33	09.01.2022	15	215
34	10.01.2022	15	272
35	11.01.2022	10	171
36	12.01.2022	33	550
37	13.01.2022	30	542
38	14.01.2022	45	798
39	15.01.2022	46	789
40	16.01.2022	29	501
41	17.01.2022	29	469
42	18.01.2022	38	645
43	19.01.2022	41	692
44	20.01.2022	33	562
45	21.01.2022	30	480
46	22.01.2022	21	375
47	23.01.2022	19	354
48	24.01.2022	13	207
49	25.01.2022	22	373
50	26.01.2022	24	393
51	27.01.2022	36	630
52	28.01.2022	42	711
53	29.01.2022	40	636
54	30.01.2022	15	264
55	31.01.2022	24	372
56	01.02.2022	31	528
57	02.02.2022	58	1012
58	03.02.2022	41	763
59	04.02.2022	34	543
60	05.02.2022	35	542
61	06.02.2022	32	551
62	07.02.2022	30	466
63	08.02.2022	39	640
64	09.02.2022	32	549
65	10.02.2022	37	633
66	11.02.2022	22	339
67	12.02.2022	24	395
68	13.02.2022	19	329
69	14.02.2022	10	192
70	15.02.2022	22	363
71	16.02.2022	24	414
72	17.02.2022	10	180

73	18.02.2022	16	245
74	19.02.2022	–	–
75	20.02.2022	–	–
76	21.02.2022	09	156
77	22.02.2022	42	660
78	23.02.2022	21	367
79	24.02.2022	10	159
80	25.02.2022	16	282
81	26.02.2022	13	194
82	27.02.2022	39	660
83	28.02.2022	28	513
84	01.03.2022	16	271
85	02.03.2022	24	397
86	03.03.2022	16	282
87	04.03.2022	21	345
88	05.03.2022	18	297
89	06.03.2022	19	367
90	07.03.2022	63	1033
91	08.03.2022	31	536
92	09.03.2022	29	506
93	10.03.2022	43	714
94	11.03.2022	28	478
95	12.03.2022	61	1025
96	13.03.2022	45	804
97	14.03.2022	64	1049
98	15.03.2022	59	977
99	16.03.2022	22	377
100	17.03.2022	08	134
101	18.03.2022	01	14
102	19.03.2022	04	74
103	20.03.2022	41	690
104	21.03.2022	42	718
105	22.03.2022	56	932
106	23.03.2022	39	635
107	24.03.2022	48	785
108	25.03.2022	46	813
109	26.03.2022	30	520
110	27.03.2022	42	670
110	28.03.2022	40	683
111	29.03.2022	49	835
112	30.03.2022	49	827
113	31.03.2022	55	921

114	01.04.2022	46	836
115	02.04.2022	25	405
116	03.04.2022	50	851
117	04.04.2022	55	932
118	05.04.2022	63	1079
119	06.04.2022	34	595
120	07.04.2022	44	756
121	08.04.2022	50	866
122	09.04.2022	38	668
123	10.04.2022	39	703
124	11.04.2022	36	587
125	12.04.2022	43	726
126	13.04.2022	58	999
127	14.04.2022	52	909
128	15.04.2022	38	644
129	16.04.2022	27	462
130	17.04.2022	37	634
131	18.04.2022	46	767
132	19.04.2022	60	1027
133	20.04.2022	32	532
134	21.04.2022	08	152
135	22.04.2022	12	195
136	23.04.2022	09	141
137	24.04.2022	10	156
138	25.04.2022	20	313
139	26.04.2022	23	402
140	27.04.2022	21	352
141	28.04.2022	22	363
142	29.04.2022	27	474
143	30.04.2022	28	477
144	01.05.2022	29	506
145	02.05.2022	43	730
146	03.05.2022	34	566
147	04.05.2022	34	590
148	05.05.2022	40	702
149	06.05.2022	53	955
150	07.05.2022	30	509
151	08.05.2022	42	738
152	09.05.2022	20	364
153	10.05.2022	59	1054
154	11.05.2022	54	935
155	12.05.2022	49	826

156	13.05.2022	20	331
157	14.05.2022	43	737
158	15.05.2022	55	956
159	16.05.2022	33	557
160	17.05.2022	57	973
161	18.05.2022	71	1252
162	19.05.2022	41	695
163	20.05.2022	78	1304
164	21.05.2022	47	913
165	22.05.2022	49	944
166	23.05.2022	46	829
167	24.05.2022	53	958
168	25.05.2022	81	1489
169	26.05.2022	85	1568
170	27.05.2022	126	2301
171	28.05.2022	154	2712
172	29.05.2022	142	2581
173	30.05.2022	138	2426
174	31.05.2022	117	2107
175	01.06.2022	154	2704
176	02.06.2022	49	861
177	03.06.2022	96	1654
178	04.06.2022	91	1159
179	05.06.2022	72	1249
180	06.06.2022	69	1162
181	07.06.2022	95	1673
182	08.06.2022	91	1541
183	09.06.2022	94	1696
184	10.06.2022	86	1445
185	11.06.2022	73	1252
186	12.06.2022	55	963
187	13.06.2022	18	303
188	14.06.2022	35	605
189	15.06.2022	13	225
190	16.06.2022	48	827
191	17.06.2022	39	671
192	18.06.2022	64	1110
193	19.06.2022	73	1262
194	20.06.2022	43	750
195	21.06.2022	42	703
196	22.06.2022	56	954
197	23.06.2022	60	1025

198	24.06.2022	72	1215
199	25.06.2022	67	1140
200	26.06.2022	64	1098
201	27.06.2022	60	974
202	28.06.2022	40	669
203	29.06.2022	84	1747
204	30.06.2022	134	3310
	कुल–	**8955**	**1,55,294 घन मीटर**

नोटः– उपरोक्त डाटा आनलाइन पोर्टल के आधार पर लिया गया है।

2- Daily production data of the mines in question to verify the status of compliance of the condition prescribed in the environmental clearance issued by SEIAA.

मै0 कान्हा कन्सट्रक्शन कम्पनी खण्ड नं0–23/13 ग्राम भेडी खरका तहसील सरीला जनपद हमीरपुर

पट्टा अवधि–09.12.2018 से 08.12.2023 तक

खनन प्रारम्भ करने का व बन्द होने का दिनांक–11.12.2018 से 30.06.2022

वित्तीय वर्ष–2021–22

क्र0सं0	दिनांक	प्रपत्र ई–एम0एम0–11 की संख्या	घन मीटर
1	09.12.2021	32	528
2	10.12.2021	35	534
3	11.12.2021	25	403
4	12.12.2021	12	193
5	13.12.2021	30	455
6	14.12.2021	21	341
7	15.12.2021	18	296
8	16.12.2021	17	277
9	17.12.2021	16	257
10	18.12.2021	15	248
11	19.12.2021	20	343
12	20.12.2021	16	292
13	21.12.2021	10	158
14	22.12.2021	20	285
15	23.12.2021	09	134
16	24.12.2021	16	264
17	25.12.2021	21	294
18	26.12.2021	08	138
19	27.12.2021	13	185
20	28.12.2021	11	168
21	29.12.2021	05	77
22	30.12.2021	–	–
23	31.12.2021	14	225
24	01.01.2022	–	–
25	02.01.2022	–	–
26	03.01.2022	–	–
27	04.01.2022	–	–
28	05.01.2022	–	–
29	06.01.2022	–	–
30	07.01.2022	–	–
31	08.01.2022	–	–

32	09.01.2022	–	–
33	10.01.2022	–	–
34	11.01.2022	–	–
35	12.01.2022	–	–
36	13.01.2022	–	–
37	14.01.2022	–	–
38	15.01.2022	–	–
39	16.01.2022	–	–
40	17.01.2022	–	–
41	18.01.2022	–	–
42	19.01.2022	–	–
43	20.01.2022	–	–
44	21.01.2022	–	–
45	22.01.2022	–	–
46	23.01.2022	–	–
47	24.01.2022	–	–
48	25.01.2022	–	–
49	26.01.2022	–	–
50	27.01.2022	–	–
51	28.01.2022	–	–
52	29.01.2022	21	366
53	30.01.2022	25	435
54	31.01.2022	15	258
55	01.02.2022	–	–
56	02.02.2022	–	–
57	03.02.2022	–	–
58	04.02.2022	–	–
59	05.02.2022	–	–
60	06.02.2022	–	–
61	07.02.2022	–	–
62	08.02.2022	–	–
63	09.02.2022	–	–
64	10.02.2022	01	14
65	11.02.2022	08	131
66	12.02.2022	22	391
67	13.02.2022	12	209
68	14.02.2022	30	486
69	15.02.2022	05	67
70	16.02.2022	16	283
71	17.02.2022	14	254
72	18.02.2022	12	266
73	19.02.2022	01	20

74	20.02.2022	03	39
75	21.02.2022	21	362
76	22.02.2022	06	105
77	23.02.2022	03	52
78	24.02.2022	05	88
79	25.02.2022	11	204
80	26.02.2022	10	201
81	27.02.2022	08	156
82	28.02.2022	01	18
83	01.03.2022	03	47
84	02.03.2022	06	103
85	03.03.2022	05	89
86	04.03.2022	06	108
87	05.03.2022	–	–
88	06.03.2022	–	–
89	07.03.2022	–	–
90	08.03.2022	–	–
91	09.03.2022	–	–
92	10.03.2022	–	–
93	11.03.2022	–	–
94	12.03.2022	–	–
95	13.03.2022	–	–
96	14.03.2022	–	–
97	15.03.2022	05	95
98	16.03.2022	14	234
99	17.03.2022	07	107
100	18.03.2022	01	18
101	19.03.2022	–	–
102	20.03.2022	03	46
103	21.03.2022	07	127
104	22.03.2022	07	128
105	23.03.2022	05	88
106	24.03.2022	10	191
107	25.03.2022	01	18
108	26.03.2022	03	50
109	27.03.2022	06	106
110	28.03.2022	03	56
110	29.03.2022.	03	54
111	30.03.2022	01	14
112	31.03.2022	–	–
113	01.04.2022	–	–
114	02.04.2022	–	–

115	03.04.2022	–	–
116	04.04.2022	–	–
117	05.04.2022	–	–
118	06.04.2022	–	–
119	07.04.2022	–	–
120	08.04.2022	–	–
121	09.04.2022	01	18
122	10.04.2022	01	18
123	11.04.2022	–	–
124	12.04.2022	–	–
125	13.04.2022	01	18
126	14.04.2022	03	49
127	15.04.2022	04	66
128	16.04.2022	04	69
129	17.04.2022	03	58
130	18.04.2022	04	65
131	19.04.2022	03	48
132	20.04.2022	03	52
133	21.04.2022	08	158
134	22.04.2022	06	102
135	23.04.2022	16	324
136	24.04.2022	10	190
137	25.04.2022	08	130
138	26.04.2022	02	34
139	27.04.2022	03	56
140	28.04.2022	–	–
141	29.04.2022	–	–
142	30.04.2022	–	–
143	01.05.2022	–	–
144	02.05.2022	–	–
145	03.05.2022	–	–
146	04.05.2022	–	–
147	05.05.2022	–	–
148	06.05.2022	–	–
149	07.05.2022	–	–
150	08.05.2022	–	–
151	09.05.2022	–	–
152	10.05.2022	–	–
153	11.05.2022	–	–
154	12.05.2022	–	–
155	13.05.2022	–	–
156	14.05.2022	–	–

157	15.05.2022	–	–
158	16.05.2022	–	–
159	17.05.2022	–	–
160	18.05.2022	–	–
161	19.05.2022	–	–
162	20.05.2022	–	–
163	21.05.2022	–	–
164	22.05.2022	–	–
165	23.05.2022	–	–
166	24.05.2022	–	–
167	25.05.2022	–	–
168	26.05.2022	–	–
169	27.05.2022	–	–
170	28.05.2022	–	–
171	29.05.2022	–	–
172	30.05.2022	–	–
173	31.05.2022	–	–
174	01.06.2022	–	–
175	02.06.2022	–	–
176	03.06.2022	–	–
177	04.06.2022	–	–
178	05.06.2022	25	352
179	06.06.2022	80	1481
180	07.06.2022	91	1648
181	08.06.2022	160	2230
182	09.06.2022	204	4512
183	10.06.2022	184	4087
184	11.06.2022	187	4328
185	12.06.2022	182	4269
186	13.06.2022	159	3876
187	14.06.2022	131	3240
188	15.06.2022	278	6822
189	16.06.2022	222	5473
190	17.06.2022	317	7872
191	18.06.2022	298	7317
192	19.06.2022	309	7667
193	20.06.2022	371	9126
194	21.06.2022	363	8697
195	22.06.2022	330	8006
196	23.06.2022	17	264
197	24.06.2022	22	343
198	25.06.2022	11	165

199	26.06.2022	14	249
200	27.06.2022	13	169
201	28.06.2022	17	252
202	29.06.2022	195	4570
203	30.06.2022	340	8166
कुल–		5330	1,18,815 घन मीटर

नोटः– उपरोक्त डाटा आनलाइन पोर्टल के आधार पर लिया गया है।

2- Daily production data of the mines in question to verify the status of compliance of the condition prescribed in the environmental clearance issued by SEIAA.

मै0 अन्नपूर्णा उद्योग खण्ड नं0–10/22 ग्राम बेरी तहसील व जनपद हमीरपुर
पट्टा अवधि–02.01.2022 से 01.01.2027 तक
खनन प्रारम्भ करने का व बन्द होने का दिनांक–05.01.2022 से 30.06.2022

वित्तीय वर्ष–2021–22

क्र0सं0	दिनांक	प्रपत्र ई–एम0एम0–11 की संख्या	घन मीटर
1	02.01.2022	–	–
2	03.01.2022	–	–
3	04.01.2022	–	–
4	05.01.2022	19	295
5	06.01.2022	24	443
6	07.01.2022	01	11
7	08.01.2022	–	–
8	09.01.2022	–	–
9	10.01.2022	–	–
10	11.01.2022	04	72
11	12.01.2022	15	238
12	13.01.2022	89	1433
13	14.01.2022	57	921
14	15.01.2022	95	1562
15	16.01.2022	69	1170
16	17.01.2022	77	1258
17	18.01.2022	83	1411
18	19.01.2022	76	1278
19	20.01.2022	96	1632
20	21.01.2022	73	1214
21	22.01.2022	65	1100
22	23.01.2022	37	646
23	24.01.2022	81	1403
24	25.01.2022	100	1618
25	26.01.2022	96	1577
26	27.01.2022	114	1919
27	28.01.2022	124	2080
28	29.01.2022	133	2166
29	30.01.2022	103	1747
30	31.01.2022	110	1810

31	01.02.2022	86	1485
32	02.02.2022	161	2655
33	03.02.2022	116	1910
34	04.02.2022	84	1420
35	05.02.2022	111	1849
36	06.02.2022	65	1066
37	07.02.2022	95	1544
38	08.02.2022	105	1713
39	09.02.2022	89	1503
40	10.02.2022	97	1644
41	11.02.2022	92	1505
42	12.02.2022	107	1744
43	13.02.2022	108	1788
44	14.02.2022	77	1257
45	15.02.2022	117	1919
46	16.02.2022	102	1634
47	17.02.2022	85	1373
48	18.02.2022	68	1116
49	19.02.2022	30	504
50	20.02.2022	23	363
51	21.02.2022	127	2112
52	22.02.2022	64	1016
53	23.02.2022	96	1570
54	24.02.2022	85	1336
55	25.02.2022	110	1807
56	26.02.2022	92	1496
57	27.02.2022	125	2053
58	28.02.2022	94	1536
59	01.03.2022	125	2007
60	02.03.2022	100	1588
61	03.03.2022	99	1623
62	04.03.2022	110	1765
63	05.03.2022	108	1735
64	06.03.2022	144	2347
65	07.03.2022	220	3674
66	08.03.2022	150	2351
67	09.03.2022	157	2530
68	10.03.2022	118	1888
69	11.03.2022	178	2865
70	12.03.2022	128	2062
71	13.03.2022	139	2282
72	14.03.2022	112	1839

73	15.03.2022	133	2166
74	16.03.2022	96	1607
75	17.03.2022	28	479
76	18.03.2022	06	102
77	19.03.2022	16	284
78	20.03.2022	88	1402
79	21.03.2022	137	2250
80	22.03.2022	134	2175
81	23.03.2022	113	1843
82	24.03.2022	104	1652
83	25.03.2022	102	1745
84	26.03.2022	110	1743
85	27.03.2022	95	1570
86	28.03.2022	124	2018
87	29.03.2022	117	1981
88	30.03.2022	110	1609
89	31.03.2022	114	1884
90	01.04.2022	129	2164
91	02.04.2022	100	1687
92	03.04.2022	116	1938
93	04.04.2022	138	2212
94	05.04.2022	147	2443
95	06.04.2022	169	2720
96	07.04.2022	193	3295
97	08.04.2022	137	2367
98	09.04.2022	166	2747
99	10.04.2022	173	2995
100	11.04.2022	184	3202
101	12.04.2022	193	3350
102	13.04.2022	264	4711
103	14.04.2022	222	4081
104	15.04.2022	198	3602
105	16.04.2022	186	3475
106	17.04.2022	192	3251
107	18.04.2022	124	2075
108	19.04.2022	195	3638
109	20.04.2022	196	3421
110	21.04.2022	214	3984
110	22.04.2022	262	4943
111	23.04.2022	261	5071
112	24.04.2022	200	3398
113	25.04.2022	207	3767

114	26.04.2022	183	3250
115	27.04.2022	195	3599
116	28.04.2022	231	4310
117	29.04.2022	202	3639
118	30.04.2022	212	3767
119	01.05.2022	213	3634
120	02.05.2022	188	3038
121	03.05.2022	211	3396
122	04.05.2022	173	2829
123	05.05.2022	122	1979
124	06.05.2022	190	3296
125	07.05.2022	107	1725
126	08.05.2022	251	4762
127	09.05.2022	105	1713
128	10.05.2022	154	2849
129	11.05.2022	210	3851
130	12.05.2022	124	2166
131	13.05.2022	188	3327
132	14.05.2022	210	3823
133	15.05.2022	144	2429
134	16.05.2022	175	3066
135	17.05.2022	152	2533
136	18.05.2022	194	3378
137	19.05.2022	140	2387
138	20.05.2022	222	3849
139	21.05.2022	224	3960
140	22.05.2022	284	5148
141	23.05.2022	276	4955
142	24.05.2022	260	4529
143	25.05.2022	312	5606
144	26.05.2022	237	4135
145	27.05.2022	310	5195
146	28.05.2022	364	6288
147	29.05.2022	264	4512
148	30.05.2022	265	4329
149	31.05.2022	243	4024
150	01.06.2022	237	3911
151	02.06.2022	259	4494
152	03.06.2022	286	5081
153	04.06.2022	342	6044
154	05.06.2022	337	6167
155	06.06.2022	260	4554

156	07.06.2022	296	5453
157	08.06.2022	218	3886
158	09.06.2022	256	4708
159	10.06.2022	198	3245
160	11.06.2022	235	4390
161	12.06.2022	262	4596
162	13.06.2022	196	3283
163	14.06.2022	232	3856
164	15.06.2022	208	3478
165	16.06.2022	242	4039
166	17.06.2022	268	4408
167	18.06.2022	190	3147
168	19.06.2022	225	3844
169	20.06.2022	241	4031
170	21.06.2022	236	4078
171	22.06.2022	175	2977
172	23.06.2022	211	3602
173	25.06.2022	175	2898
174	26.06.2022	205	3487
175	27.06.2022	193	3308
176	28.06.2022	233	3857
177	29.06.2022	203	3468
178	30.06.2022	289	4786
	31.06.2022	337	5817
	कुल–	**27213**	**4,65,694 घन मीटर**

नोटः– उपरोक्त डाटा आनलाइन पोर्टल के आधार पर लिया गया है।

2- Daily production data of the mines in question to verify the status of compliance of the condition prescribed in the environmental clearance issued by SEIAA.

श्री शैलेन्द्र यादव खण्ड नं0–31/4 ग्राम पत्यौरा तहसील व जनपद हमीरपुर
पट्टा अवधि–07.01.2021 से 06.01.2026 तक
खनन प्रारम्भ करने का व बन्द होने का दिनांक–13.01.2021 से 31.05.2022

वित्तीय वर्ष–2021–22

क्र0सं0	दिनांक	प्रपत्र ई–एम0एम0–11 की संख्या	घन मीटर
1	07.01.2022	01	11
2	08.01.2022	–	–
3	09.01.2022	–	–
4	10.01.2022	–	–
5	11.01.2022	04	72
6	12.01.2022	15	238
7	13.01.2022	89	1433
8	14.01.2022	57	921
9	15.01.2022	92	1562
10	16.01.2022	69	1170
11	17.01.2022	77	1258
12	18.01.2022	83	1411
13	19.01.2022	76	1278
14	20.01.2022	96	1632
15	21.01.2022	73	1214
16	22.01.2022	65	1100
17	23.01.2022	37	646
18	24.01.2022	81	1403
19	25.01.2022	100	1618
20	26.01.2022	96	1577
21	27.01.2022	114	1919
22	28.01.2022	124	2080
23	29.01.2022	133	2166
24	30.01.2022	103	1747
25	31.01.2022	110	1810
26	01.02.2022	86	1485
27	02.02.2022	161	2655
28	03.02.2022	116	1910
29	04.02.2022	84	1420
30	05.02.2022	111	1894

31	06.02.2022	65	1066
32	07.02.2022	95	1544
33	08.02.2022	105	1713
34	09.02.2022	89	1503
35	10.02.2022	97	1644
36	11.02.2022	92	1505
37	12.02.2022	107	1744
38	13.02.2022	108	1788
39	14.02.2022	77	1257
40	15.02.2022	117	1919
41	16.02.2022	102	1634
42	17.02.2022	85	1373
43	18.02.2022	68	1116
44	19.02.2022	30	504
45	20.02.2022	23	363
46	21.02.2022	127	2112
47	22.02.2022	64	1016
48	23.02.2022	96	1570
49	24.02.2022	85	1336
50	25.02.2022	110	1807
51	26.02.2022	92	1496
52	27.02.2022	125	2053
53	28.02.2022	94	1536
54	01.03.2022	125	2007
55	02.03.2022	100	1588
56	03.03.2022	99	1623
57	04.03.2022	110	1765
58	05.03.2022	108	1735
59	06.03.2022	144	2347
60	07.03.2022	220	2674
61	08.03.2022	150	2351
62	09.03.2022	157	2530
63	10.03.2022	118	1888
64	11.03.2022	178	2865
65	12.03.2022	128	2062
66	13.03.2022	139	2282
67	14.03.2022	112	1839
68	15.03.2022	133	2166
69	16.03.2022	96	1607
70	17.03.2022	28	479
71	18.03.2022	06	102
72	19.03.2022	16	284

73	20.03.2022	88	1402
74	21.03.2022	137	2250
75	22.03.2022	113	2175
76	23.03.2022	104	1843
77	24.03.2022	102	1652
78	25.03.2022	110	1745
79	26.03.2022	95	1743
80	27.03.2022	124	1570
81	28.03.2022	117	2018
82	29.03.2022	100	1981
83	30.03.2022	114	1609
84	31.03.2022	114	1884
85	01.04.2022	129	2164
86	02.04.2022	100	1687
87	03.04.2022	116	1938
88	04.04.2022	138	2212
89	05.04.2022	147	2443
90	06.04.2022	169	2720
91	07.04.2022	193	3295
92	08.04.2022	137	2367
93	09.04.2022	166	2747
94	10.04.2022	173	2995
95	11.04.2022	184	3202
96	12.04.2022	193	3350
97	13.04.2022	264	4711
98	14.04.2022	222	4081
99	15.04.2022	198	3602
100	16.04.2022	186	3475
101	17.04.2022	192	3251
102	18.04.2022	124	2074
103	19.04.2022	195	3638
104	20.04.2022	196	3421
105	21.04.2022	214	3984
106	22.04.2022	262	4943
107	23.04.2022	261	5071
108	24.04.2022	200	3398
109	25.04.2022	207	3767
110	26.04.2022	183	3250
111	27.04.2022	195	3599
112	28.04.2022	231	4301
113	29.04.2022	202	3639
114	30.04.2022	212	3767

115	01.05.2022	213	3634
116	02.05.2022	188	3038
117	03.05.2022	211	3396
118	04.05.2022	173	2829
119	05.05.2022	122	1979
120	06.05.2022	190	3296
121	07.05.2022	107	1725
122	08.05.2022	251	4762
123	09.05.2022	105	1713
124	10.05.2022	154	2849
125	11.05.2022	210	3851
126	12.05.2022	124	2166
127	13.05.2022	188	3327
128	14.05.2022	210	3823
129	15.05.2022	144	2429
130	16.05.2022	175	3066
131	17.05.2022	152	2533
132	18.05.2022	194	3378
133	19.05.2022	140	2387
134	20.05.2022	222	3849
135	21.05.2022	224	3960
136	22.05.2022	284	5148
137	23.05.2022	276	4955
138	24.05.2022	260	4529
139	25.05.2022	312	5606
140	26.05.2022	237	4135
141	27.05.2022	310	5195
142	28.05.2022	364	6288
143	29.05.2022	264	4512
144	30.05.2022	265	4329
145	31.05.2022	243	4024
कुल		19892	3,39,098 घन मीटर

नोटः– उपरोक्त डाटा आनलाइन पोर्टल के आधार पर लिया गया है।

2- Daily production data of the mines in question to verify the status of compliance of the condition prescribed in the environmental clearance issued by SEIAA.

श्री कान्त गुप्ता खण्ड नं0–24/13 ग्राम चिकासी तहसील सरीला जनपद हमीरपुर

पट्टा अवधि–02.01.2020 से 01.01.2025 तक

खनन प्रारम्भ करने का व बन्द होने का दिनांक–09.01.2020 से 30.06.2022

वित्तीय वर्ष–2021–22

क्र0सं0	दिनांक	प्रपत्र ई–एम0एम0–11 की संख्या	घन मीटर
1	02.01.2022	–	–
2	03.01.2022	–	–
3	04.01.2022	–	–
4	05.01.2022	–	–
5	06.01.2022	–	–
6	07.01.2022	51	990
7	08.01.2022	86	1746
8	09.01.2022	94	1881
9	10.01.2022	86	1779
10	11.01.2022	128	2654
11	12.01.2022	45	882
12	13.01.2022	66	1273
13	14.01.2022	76	1465
14	15.01.2022	53	1066
15	16.01.2022	45	890
16	17.01.2022	53	1062
17	18.01.2022	54	1447
18	19.01.2022	72	834
19	20.01.2022	41	631
20	21.01.2022	32	976
21	22.01.2022	50	934
22	23.01.2022	46	1221
23	24.01.2022	62	441
24	25.01.2022	20	443
25	26.01.2022	22	635
26	27.01.2022	30	804
27	28.01.2022	41	1344
28	29.01.2022	67	1312
29	30.01.2022	69	1104
30	31.01.2022	56	

31	01.02.2022	56	1067
32	02.02.2022	71	1318
33	03.02.2022	77	1423
34	04.02.2022	48	874
35	05.02.2022	80	1500
36	06.02.2022	66	1215
37	07.02.2022	71	1352
38	08.02.2022	96	1861
39	09.02.2022	91	1730
40	10.02.2022	86	1628
41	11.02.2022	64	1245
42	12.02.2022	82	1589
43	13.02.2022	62	1226
44	14.02.2022	52	996
45	15.02.2022	50	1003
46	16.02.2022	51	1008
47	17.02.2022	32	637
48	18.02.2022	28	562
49	19.02.2022	26	520
50	20.02.2022	08	157
51	21.02.2022	116	2354
52	22.02.2022	70	1348
53	23.02.2022	77	1449
54	24.02.2022	58	1130
55	25.02.2022	46	877
56	26.02.2022	55	1021
57	27.02.2022	72	1330
58	28.02.2022	77	1541
59	01.03.2022	44	896
60	02.03.2022	45	888
61	03.03.2022	52	1003
62	04.03.2022	99	1982
63	05.03.2022	89	1773
64	06.03.2022	101	1976
65	07.03.2022	84	1591
66	08.03.2022	95	1805
67	09.03.2022	82	1549
68	10.03.2022	80	1530
69	11.03.2022	101	2001
70	12.03.2022	75	1453
71	13.03.2022	86	1691
72	14.03.2022	97	1882

73	15.03.2022	99	1937
74	16.03.2022	104	1980
75	17.03.2022	41	786
76	18.03.2022	–	–
77	19.03.2022	04	74
78	20.03.2022	50	1005
79	21.03.2022	80	1571
80	22.03.2022	82	1570
81	23.03.2022	91	1811
82	24.03.2022	90	1822
83	25.03.2022	99	1907
84	26.03.2022	111	2174
85	27.03.2022	100	1830
86	28.03.2022	97	1830
87	29.03.2022	113	2146
88	30.03.2022	103	1930
89	31.03.2022	92	1730
90	01.04.2022	116	2238
91	02.04.2022	108	2058
92	03.04.2022	85	1656
93	04.04.2022	80	1560
94	05.04.2022	101	1999
95	06.04.2022	77	1514
96	07.04.2022	109	2088
97	08.04.2022	94	1814
98	09.04.2022	105	2084
99	10.04.2022	90	1756
100	11.04.2022	56	1098
101	12.04.2022	62	1167
102	13.04.2022	38	744
103	14.04.2022	–	–
104	15.04.2022	01	18
105	16.04.2022	05	71
106	17.04.2022	09	149
107	18.04.2022	03	42
108	19.04.2022	09	102
109	20.04.2022	08	98
110	21.04.2022	14	177
111	22.04.2022	–	–
112	23.04.2022	–	–
113	24.04.2022	–	–
114	25.04.2022	06	69

115	26.04.2022	04	44
116	27.04.2022	–	–
117	28.04.2022	–	–
118	29.04.2022	09	172
119	30.04.2022	–	–
120	01.05.2022	–	–
121	02.05.2022	–	–
122	03.05.2022	–	–
123	04.05.2022	–	–
124	05.05.2022	02	29
125	06.05.2022	–	–
126	07.05.2022	03	56
127	08.05.2022	06	130
128	09.05.2022	–	–
129	10.05.2022	–	–
130	11.05.2022	–	–
131	12.05.2022	52	994
132	13.05.2022	98	1907
133	14.05.2022	63	1206
134	15.05.2022	83	1615
135	16.05.2022	63	1200
136	17.05.2022	41	728
137	18.05.2022	64	1257
138	19.05.2022	41	792
139	20.05.2022	59	1096
140	21.05.2022	60	1147
141	22.05.2022	84	1612
142	23.05.2022	57	1080
143	24.05.2022	73	1413
144	25.05.2022	206	4068
145	26.05.2022	190	3707
146	27.05.2022	72	1428
147	28.05.2022	86	1682
148	29.05.2022	113	2115
149	30.05.2022	110	2189
150	31.05.2022	109	2076
151	01.06.2022	96	1858
152	02.06.2022	125	2404
153	03.06.2022	95	1814
154	04.06.2022	109	2068
155	05.06.2022	110	2132
156	06.06.2022	90	1748

157	07.06.2022	92	1724
158	08.06.2022	56	1089
159	09.06.2022	93	1773
160	10.06.2022	48	945
161	11.06.2022	54	1015
162	12.06.2022	65	1274
163	13.06.2022	45	848
164	14.06.2022	56	1090
165	15.06.2022	48	881
166	16.06.2022	38	715
167	17.06.2022	60	1135
168	18.06.2022	61	1168
169	19.06.2022	60	1076
170	20.06.2022	34	696
171	21.06.2022	40	745
172	22.06.2022	39	719
173	23.06.2022	09	170
174	24.06.2022	36	683
175	25.06.2022	119	2318
176	26.06.2022	39	775
177	27.06.2022	111	2205
178	28.06.2022	149	2881
179	29.06.2022	112	2238
180	30.06.2022	55	1112
कुल		10747	2,07,442 घन मीटर

नोटः– उपरोक्त डाटा आनलाइन पोर्टल के आधार पर लिया गया है।

2- Daily production data of the mines in question to verify the status of compliance of the condition prescribed in the environmental clearance issued by SEIAA.

श्री आनन्द कुमार गुप्ता खण्ड नं0–24/17 ग्राम चिकासी तहसील सरीला जनपद हमीरपुर

पट्टा अवधि–16.03.2020 से 15.03.2024 तक

खनन प्रारम्भ करने का व बन्द होने का दिनांक–24.03.2020 से 30.06.2022 तक

वित्तीय वर्ष–2021–22

क्र0सं0	दिनांक	प्रपत्र ई–एम0एम0–11 की संख्या	घन मीटर
1	16.03.2022	72	1362
2	17.03.2022	77	1427
3	18.03.2022	09	161
4	19.03.2022	28	569
5	20.03.2022	96	1916
6	21.03.2022	102	2006
7	22.03.2022	124	2408
8	23.03.2022	130	2557
9	24.03.2022	101	1979
10	25.03.2022	87	1711
11	26.03.2022	189	3895
12	27.03.2022	171	3519
13	28.03.2022	106	2101
14	29.03.2022	140	2841
15	30.03.2022	97	1881
16	31.03.2022	124	2498
17	01.04.2022	150	3088
18	02.04.2022	95	1852
19	03.04.2022	129	2636
20	04.04.2022	77	1542
21	05.04.2022	137	2829
22	06.04.2022	152	3168
23	07.04.2022	147	3144
24	08.04.2022	214	4477
25	09.04.2022	228	5030
26	10.04.2022	148	5424
27	11.04.2022	176	3750
28	12.04.2022	120	2471
29	13.04.2022	170	3413
30	14.04.2022	213	4095
31	15.04.2022	284	5826

32	16.04.2022	267	5485
33	17.04.2022	247	5058
34	18.04.2022	203	4208
35	19.04.2022	182	3786
36	20.04.2022	282	6052
37	21.04.2022	141	3045
38	22.04.2022	245	5238
39	23.04.2022	218	4854
40	24.04.2022	141	2940
41	25.04.2022	51	7747
42	26.04.2022	319	7084
43	27.04.2022	263	5646
44	28.04.2022	240	4954
45	29.04.2022	227	4756
46	30.04.2022	340	7185
47	01.05.2022	315	6772
48	02.05.2022	266	5589
49	03.05.2022	336	7126
50	04.05.2022	317	6800
51	05.05.2022	358	7634
52	06.05.2022	413	8941
53	07.05.2022	423	9244
54	08.05.2022	437	9509
55	09.05.2022	323	6969
56	10.05.2022	288	6060
57	11.05.2022	369	7910
58	12.05.2022	219	4680
59	13.05.2022	158	3317
60	14.05.2022	183	3954
61	15.05.2022	187	4006
62	16.05.2022	231	4966
63	17.05.2022	104	2100
64	18.05.2022	141	2812
65	19.05.2022	124	2488
66	20.05.2022	141	2771
67	21.05.2022	143	2838
68	22.05.2022	166	3335
69	23.05.2022	134	2579
70	24.05.2022	150	2918
71	25.05.2022	66	1222
72	26.05.2022	58	1174
73	27.05.2022	101	2025

74	28.05.2022	152	3040
75	29.05.2022	163	3205
76	30.05.2022	132	2649
77	31.05.2022	144	2800
78	01.06.2022	133	2697
79	02.06.2022	126	2497
80	03.06.2022	120	2422
81	04.06.2022	150	2945
82	05.06.2022	151	3035
83	06.06.2022	150	2932
84	07.06.2022	166	3227
85	08.06.2022	158	3051
86	09.06.2022	199	3917
87	10.06.2022	215	4139
88	11.06.2022	266	5093
89	12.06.2022	302	5741
90	13.06.2022	235	4542
91	14.06.2022	327	6282
92	15.06.2022	337	6420
93	16.06.2022	280	5327
94	17.06.2022	317	6065
95	18.06.2022	252	6757
96	19.06.2022	348	6579
97	20.06.2022	315	6086
98	21.06.2022	208	3935
99	22.06.2022	388	7391
100	23.06.2022	268	5149
101	24.06.2022	375	7200
102	25.06.2022	348	6626
103	26.06.2022	401	7771
104	27.06.2022	336	6413
105	28.06.2022	397	7796
106	29.06.2022	321	6205
107	30.06.2022	358	6953
कुल–		21,982	4,60,240 घन मीटर

नोटः– उपरोक्त डाटा आनलाइन पोर्टल के आधार पर लिया गया है।

ANNEXURE – 05

Details of Illegal mining Pits on Betwa River in Hamirpur District Based on Google Earth Images (February 2022)

Pits found outside allotted area of mine in Hamirpur District *(Landmark: near M/s Pehlwan Traders & M/s Kanha Constructions/Near Betwa River Bridge, Jalalpur)*		
Pit No.	**Pit Co-ordinates**	**Pit Area in Hectare (Approx.)**
P-1	25°53'4.45"N, 79°48'42.74"E	2.89
P-2	25°53'1.54"N, 79°48'46.38"E	1.00
P-3	25°52'52.91"N, 79°48'36.76"E	0.52
P-4	25°52'59.87"N, 79°48'49.11"E	0.10
P-5	25°52'55.77"N, 79°48'45.92"E	4.55
P-6	25°52'59.42"N, 79°48'40.01"E	2.10
P-7	25°52'53.29"N, 79°48'51.22"E	0.10
P-8	25°52'17.03"N, 79°48'18.99"E	2.92
P-9	25°52'25.57"N, 79°48'26.63"E	2.90
P-10	25°52'34.13"N, 79°48'31.35"E	0.72
P-11	25°52'29.63"N, 79°48'26.57"E	0.98
P-12	25°52'20.61"N, 79°48'28.47"E	2.10
P-13	25°52'37.06"N, 79°48'28.25"E	0.10
P-14	25°52'38.15"N, 79°48'29.08"E	0.02
P-15	25°52'35.59"N, 79°48'30.00"E	0.43
P-16	25°52'33.39"N, 79°48'27.69"E	0.15
P-17	25°52'24.29"N, 79°48'31.32"E	3.00
P-18	25°52'39.49"N, 79°48'33.39"E	0.94
P-19	25°52'38.62"N 79°48'31.46"E	0.66
P-20	25°52'3.04"N, 79°47'38.44"E	0.39
P-21	25°52'0.77"N, 79°47'33.62"E	0.99
P-22	25°52'2.94"N, 79°47'42.01"E	0.10
P-23	25°52'4.10"N, 79°47'42.49"E	0.10
P-24	25°52'1.44"N, 79°47'30.35"E	0.78
P-25	25°52'2.26"N, 79°47'27.95"E	0.95
P-26	25°51'58.50"N, 79°47'31.67"E	0.91
P-27	25°51'52.35"N, 79°47'27.28"E	0.43
P-28	25°51'54.74"N, 79°47'24.58"E	1.53
P-29	25°51'58.10"N, 79°47'23.69"E	1.10
Pits found outside allotted area of mine in Hamirpur District *(Landmark: near Bundelkhand Expressway)*		
P-30	25°50'54.39"N, 79°29'1.44"E	All the pits are in cluster and having an area of approx. 8.79 Ha.
P-31	25°50'50.49"N, 79°29'3.56"E	
P-32	25°50'49.19"N, 79°29'6.98"E	
P-33	25°50'46.99"N, 79°29'7.54"E	
P-34	25°50'44.57"N, 79°29'6.69"E	
P-35	25°50'46.27"N, 79°29'2.86"E	
P-36	25°50'48.46"N, 79°29'12.35"E	
P-37	25°50'45.13"N, 79°29'14.21"E	
P-38	25°51'0.14"N, 79°29'12.95"E	Both Pits are adjacent to each other's and having an area of approx. 5.74 Ha.
P-39	25°51'2.63"N, 79°29'7.85"E	

P-40	25°51'9.60"N, 79°29'26.76"E	1.10
P-41	25°51'10.88"N, 79°29'28.57"E	1.14
P-42	25°51'15.97"N, 79°29'36.69"E	12.30
P-43	25°51'6.92"N, 79°29'34.79"E	1.33
P-44	25°51'16.47"N, 79°29'45.03"E	1.72
P-45	25°51'4.08"N, 79°30'6.88"E	1.98
P-46	25°51'5.16"N, 79°30'14.07"E	3.39
P-47	25°51'20.50"N, 79°30'32.64"E	4.79
P-48	25°51'14.47"N, 79°30'37.95"E	2.68
P-49	25°51'5.33"N, 79°30'34.92"E	1.10
P-50	25°51'4.54"N, 79°30'26.79"E	0.30
P-51	25°51'3.62"N, 79°30'30.76"E	1.59
P-52	25°51'1.95"N, 79°30'37.74"E	1.32
P-53	25°50'59.12"N, 79°30'36.80"E	0.40
P-54	25°50'58.64"N, 79°30'39.83"E	0.20
P-55	25°50'58.24"N, 79°30'45.62"E	1.88
P-56	25°50'54.59"N, 79°30'52.12"E	2.45
P-57	25°50'55.83"N, 79°30'55.29"E	1.46
P-58	25°50'48.49"N, 79°30'59.58"E	1.14
P-59	25°50'49.41"N, 79°31'2.37"E	1.20
P-60	25°50'52.19"N, 79°31'3.37"E	2.26
P-61	25°50'52.99"N, 79°31'7.14"E	2.70
P-62	25°50'36.47"N, 79°31'12.03"E	4.15
P-63	25°51'7.97"N 79°30'53.18"E	2.31
P-64	25°51'6.54"N 79°30'50.93"E	2.00
P-65	25°51'5.22"N 79°30'45.68"E	2.60
P-66	25°51'10.41"N 79°30'44.21"E	2.11
P-67	25°50'25.00"N 79°31'21.83"E	3.55
P-68	25°50'25.96"N 79°31'18.26"E	1.22
Pits found outside allotted area of mine in Hamirpur District		
P-69	25°51'43.74"N 79°32'59.67"E	2.39
P-70	25°51'41.69"N 79°32'55.72"E	1.10
P-71	25°53'10.52"N 79°33'39.05"E	0.92
P-72	25°53'9.76"N 79°33'44.53"E	1.64
P-73	25°53'12.39"N 79°33'44.70"E	1.33
P-74	25°53'14.01"N 79°33'47.28"E	1.23
P-75	25°53'7.97"N 79°33'51.73"E	0.67
P-76	25°53'13.56"N 79°34'11.81"E	1.11
P-77	25°53'12.98"N 79°34'16.94"E	2.65

Intercepting routes found outside allotted area of mine interrupting mid-stream of river in Hamirpur District

(Landmark: near M/s Pehlwan Traders & M/s Kanha Constructions/Near Betwa River Bridge, Jalalpur)

Bridge No.	Co-ordinates
IR-1	25°52'56.04"N, 79°48'49.50"E
IR-2	25°52'40.54"N, 79°48'32.58"E
IR-3	25°52'22.43"N, 79°48'29.76"E

IR-4	25°52'25.77"N, 79°48'29.00"E
IR-5	25°52'36.01"N, 79°48'33.50"E
IR-6	25°52'1.23"N, 79°47'35.01"E
IR-7	25°52'0.51"N, 79°47'27.39"E
IR-8	25°52'1.91"N, 79°47'29.74"E
IR-9	25°51'51.56"N, 79°47'29.46"E
IR-10	25°51'50.49"N, 79°47'24.48"E
IR-11	25°51'50.71"N, 79°47'21.24"E
IR-12	25°51'55.42"N, 79°47'23.60"E
Intercepting routes found outside allotted area of mine interrupting mid-stream of river in Hamirpur District *(Landmark: near Bundelkhand Expressway)*	
IR-13	25°50'56.48"N, 79°29'1.09"E
IR-14	25°50'52.10"N, 79°29'2.85"E
IR-15	25°50'48.60"N, 79°29'6.64"E
IR-16	25°50'51.12"N, 79°29'12.34"E
IR-17	25°50'56.87"N, 79°29'7.08"E
IR-18	25°51'1.94"N, 79°29'34.46"E
IR-19	25°51'6.13"N, 79°29'39.36"E
IR-20	25°51'6.79"N, 79°29'37.04"E
IR-21	25°51'12.36"N, 79°29'36.95"E
IR-22	25°51'7.27"N, 79°30'8.50"E
IR-23	25°51'7.03"N, 79°30'30.46"E
IR-24	25°51'6.04"N, 79°30'37.57"E
IR-25	25°51'13.95"N, 79°30'38.93"E
IR-26	25°51'10.70"N, 79°30'31.40"E
IR-27	25°51'18.36"N, 79°30'25.52"E
IR-28	25°51'7.41"N, 79°30'46.23"E

Observations:

1. The observations are as per the condition observed in Google Earth image Dated 11.02.2022.
2. Illegal mining pits and tracks/routes in and around these pits are visible in the Google Earth images.
3. Interrupting routes seen connecting across the pits and trailed inside the mid-stream of river for mining (e.g. IR-3, IR-9, IR-10, IR-11, IR-12, IR-17, IR-18, IR-19). These routes can be hinder or interrupt the Ecological flow of the river.
4. Mid-stream mining is the case at P-12, P-17, P-27, P-28, P-29, P-34, P-35, P-36, P-37 pits.
5. Un-organized haulage routes are also visible in these images.
6. Machine such as Excavator, Trucks/Tippers are visible on the Haul Roads.

Pits & Intercepting routes found outside allotted area of mine and mid-stream of river in Hamirpur District

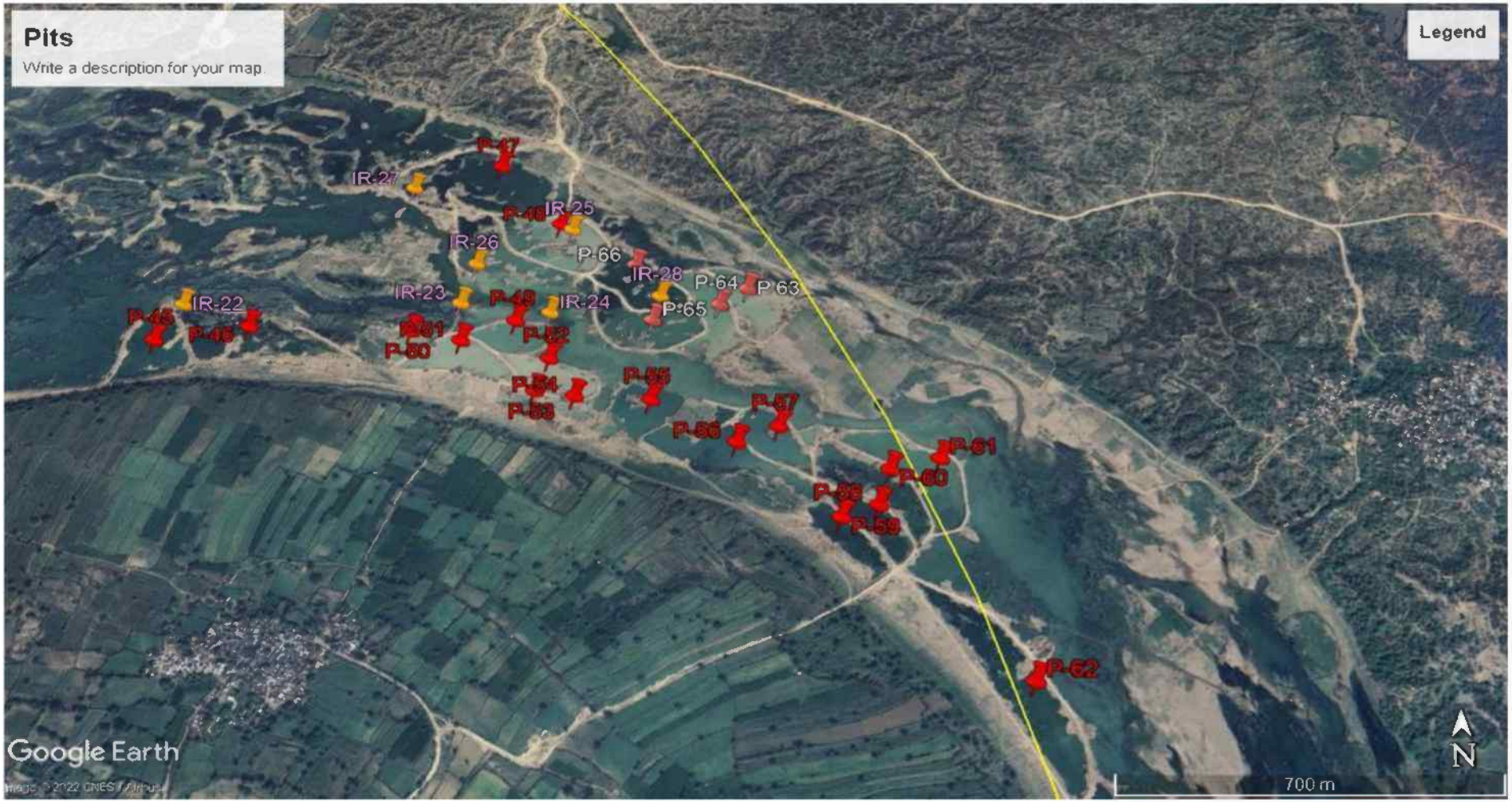
Google Image 01: Pits & Intercepting routes from P-1 to 19 & IR-1 to 5 respectively

(Landmark: Near M/s Pehlwan Traders & M/s Kanha Constructions/ Near Betwa River Bridge, Jalalpur)

Google Image 02: Pits & Intercepting routes from P-20- to 29 & IR 6 to 12 respectively

(Landmark: Near M/s Pehlwan Traders & M/s Kanha Constructions/ Near Betwa River Bridge, Jalalpur)

Google Image 03: Pits & Intercepting routes from P-30 to 44 & IR-12 to 21 respectively
(Landmark: near Bundelkhand Expressway)



Google Image 04: Pits & Intercepting routes from P-45 to 66 & IR-21 to 28 respectively

(Landmark: near Bundelkhand Expressway)

Google Image 05: Pits & Intercepting routes from P-67 & 68
(Landmark: near Bundelkhand Expressway)

Google Image 06: Pits & Intercepting routes from P-69 & 70

Google Image 07: Pits & Intercepting routes from P-71 to 77

Google Image 08: Operational machines visible near Illegal mining Pits

Google Image 09: Operational machines visible near Illegal mining Pits

Google Image 10: Operational machines visible near Illegal mining Pits

Pits & Intercepting routes found outside allotted area of mine and mid-stream of river in Hamirpur District

(Overall, Image)

ANNEXURE – 06

Copy of EC attached for ready reference

ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environmental Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), Uttar Pradesh)

To,

The Partner
M/S ANNAPURNA UDYOG
128/380, K Block, Kidwai Nagar, kanpur Nagar, UP -208011

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/UP/MIN/28157/2018 dated 30 Jan 2019. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC21B000UP192881**
2.	**File No.**	4390
3.	**Project Type**	New
4.	**Category**	B
5.	**Project/Activity including Schedule No.**	N/A
6.	**Name of Project**	Sand/Morrum Mining having lease area 36.437 ha (90.03 acre) along River Betwa in Khand No. 10/22 at Village – Beri, Tehsil- Hamirpur, District- Hamirpur, U. P. of M/s Annapurna Udyog
7.	**Name of Company/Organization**	M/S ANNAPURNA UDYOG
8.	**Location of Project**	Uttar Pradesh
9.	**TOR Date**	05 Oct 2018

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 14/12/2021

(e-signed)
Member Secretary
Member Secretary
SEIAA - (Uttar Pradesh)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

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State Level Environment Impact Assessment Authority, Uttar Pradesh

Directorate of Environment, U.P.
Vineet Khand-1, Gomti Nagar, Lucknow- 226010
E-Mail- doeuplko@yahoo.com, seiaaup@yahoo.com
Phone no- 0522-2300541

Reference- MoEFCC Proposal no- SIA/UP/MIN/28157/2018 & SEIAA, U.P File no- 4390

Sub: Environmental Clearance is sought for Sand/Morrum Mining along Betwa River Bed in Khand No.- 10/22, at Village- Beri, Tehsil- Hamirpur, District-Hamirpur, U.P. Sri Mithlesh Kumar Gupta (Applied Area- 36.437 ha).

Dear Sir,

This is with reference to your application / letter dated 11-07-2018, 12-07-2018, 30-01-2019, 05-03-2019, 30-08-2019, 23-2-2019, 08-01-2021 & 23-06-2021 on above mentioned subject. The matter was considered by SEAC in meeting held on 06-08-2021 and SEIAA in meeting held on 27-11-2021.

A presentation was made by the project proponent along with their consultant M/s Paramarsh (Servicing Environment and Development) to SEAC on 06-08-2021.

Project Details Informed by the Project Proponent and their Consultant

The project proponent, through the documents and presentation gave following details about their project –

1. The environmental clearance is sought for Sand/Morrum Mining along Betwa River Bed in Khand No.- 10/22, at Village- Beri, Tehsil- Hamirpur, District-Hamirpur, U.P. Sri Mithlesh Kumar Gupta (Applied Area- 36.437 ha).
2. **Salient features of the project as submitted by the project proponent:**

1.	Name of Proponent	Sri Mithlesh Kumar Gupta
2.	Full correspondence address of proponent and mobile no.	Sri Mithlesh Kumar Gupta S/o Mahendra Kumar Gupta R/o 128/380, K Block, Kidwai Nagar, District – Kanpur Nagar, Uttar Pradesh – 208011
		Mobile no. – 098380 70314
		E mail ID - annapurnaudyog.minerals@gmail.com
3.	Name of Project	Environmental Clearance for proposed "Sand/Morrum mining" having lease area 36.437 ha (90.03 acres) along River Betwa Khand No. 10/22 at Village – Beri, Tehsil- Hamirpur, Dist. Hamirpur, U. P. of M/s Annapurna Udyog.
4.	Project Location (Plot. Khsra/Gata No.)	Khand No. 10/22
5.	Name of River	River Betwa
6.	Name of Village	Village Beri, Tehsil – Beri, District Hamirpur U. P.
7.	Tehsil –	Beri,
8.	District	Hamirpur U. P.
9.	Name of Mineral	Sand/Morrum
10.	Sanctioned Lease Area (in ha)	36.437 ha
11.	Max. & Min mRL within the lease area	The highest mRL is 104.80 mRL* The lowest mRL is 94.40 mRL* Working depth 3.00 m

		Zero Level of the project site: 94.00 mRL*
12.	Pillar Geo-Coordinates (Verified by DMO)	River Betwa in khand No. 10/22 at Village – Beri, Tehsil- Hamirpur, District- Hamirpur, U. P. (Verified by DMO by letter no. 3053/Khanij-MMC-30- vivid(2020-21), dated 27/03/2021&Map)

Pillar	Latitude	Longitude
Total Area 36.437 ha		
A	25° 52' 45.20" N	79° 54' 08.96" E
B	25° 52' 58.05" N	79° 54' 17.65" E
C	25° 52' 50.11" N	79° 54' 29.66" E
D	25° 52' 22.01" N	79° 54' 21.21" E

13.	Total Geological Reserves	8,05,392 m3
14.	Total Mineable Reserve in LOI	5,82,912 m3/year (Calculated 4,84,143 m3)
15.	Total Proposed Production	29,84,448 m3 (in 5 years)
16.	Proposed Production/year	5,82,912 m3/annum
17.	Sanctioned Period of Mine lease	5 years
18.	Production of mine/day	2332m3/day
19.	Method of Mining	Opencast semi-mechanized
20.	No. of working days	250
21.	Working hours/day	8
22.	No of Worker	90
23.	No. of vehicles movement/day	195
24.	Type of Land	Govt/Non-Forest Land (Riverbed)
25.	Ultimate of Depth of Mining	3.0 m depth
26.	Nearest metalled road from site	1.2 km
27.	Water Requirement	PURPOSE
		Drinking - 0.90 KLD
		Suppression of dust - 7.8 KLD
		Plantation - 0.44 KLD
		Others (if any) - 0.00 KLD
		Total - 9.14 KLD
30.	Name of QCI Accredited Consultant with QCI No and period of validity.	M/s Paramarsh Servicing Environment & Development. NABET/EIA/1821/ RA 0120 Valid till – 19/10/2021
31.	Any litigation pending against the project or land in any court	No
32.	Details of 500 m Cluster Certificate verified by Mining Officer	Letter No – 1822/Khanij-MMC-30- Vividh (2020-21) dated 10/12/2020
33.	Details of Lease Area in approved DSR	Serial no. 75 Page no. 02
34.	Project Cost	1.11 Crore/annum
35.	Proposed CER Cost	2.22 lacs/annum
36.	Proposed EMP Cost	11.98 lacs
37.	Length and breadth of Haul Road	Length – 0.65 km Breadth – 6.00 m
38.	No. of Trees to be Planted	440

3. The mining would be restricted to the unsaturated zone only above the phreatic water table and will not intersect the groundwater table at any point in time.
4. The mining operation will not be carried out in the safety zone of any bridge or embankment or eco-fragile zone such as the habitat of any wild fauna.
5. There is no litigation pending in any court regarding this project.
6. The project proposal falls under category–1(a) of EIA Notification, 2006 (as amended).
7. To amend the pillar coordinates in the ToR's issued vide letter Ref. No.: 370/Parya/SEAC/4390/2017 Dated 05 September 2018 keeping rest all the conditions as the same.

Based on the recommendations of the State Level Expert Appraisal Committee (SEAC) Meeting (SEAC) held on 06-08-2021 the State Level Environment Impact Assessment Authority (SEIAA) in its Meeting dated 27-11-2021 decided to grant the Environmental Clearance to the title project for collection of 5,82,912 m^3 /annum for lease area of 36.437 ha subject to effective implementation of the following General Conditions and specific conditions:

General Conditions:

1. This environmental clearance is subject to allotment of mining lease in favour of project proponent by District Administration/Mining Department.
2. Forest clearance shall be taken by the proponent as necessary under the law.
3. Any change in the mining area, khasra numbers, entailing capacity addition with change in process and or mining technology, modernization, and scope of working shall again require prior Environmental Clearance as per the provisions of EIA Notification, 2006 (as amended).
4. Precise mining area will be jointly demarcated at the site by the project proponent and officials of the Mining/Revenue department before starting mining operations. Such site plan, duly verified by the competent authority along with a copy of the Environmental Clearance letter will be displayed on a hoarding/board at the site. A copy of the site plan will also be submitted to SEIAA within 02 months.
5. Mining and loading shall be done only within day hours.
6. No mining shall be carried out in the safety zone of any bridge and/or embankment.
7. It shall be ensured that standards related to ambient air quality/effluent as prescribed by the Ministry of Environment & Forests are strictly complied with. Water sprinklers and other dust control majors should be applied to take care of dust generated during the mining operation. The sprinkling of water on haul roads to control dust will be ensured by the project proponent.
8. All necessary statutory clearances shall be obtained before the start of mining operations. If this condition is violated, the clearance shall be automatically deemed to have been cancelled.
9. Parking of vehicles should not be made in public places.
10. No tree-felling will be done in the leased area, except only with the permission of the Forest Department.
11. No wildlife habitat will be infringed.
12. It shall be ensured that excavation of minor minerals does not disturb or change the underlying soil characteristics of the river bed /basin, where mining is carried out.
13. It shall be ensured that the mining operation of Sand/Moram will not in any way disturb the velocity and flow pattern of the river water significantly.
14. It shall be ensured that there is no fauna dependent on the river bed or areas close to mining for its nesting. A report on the same, vetted by the competent authority shall be submitted to the RO, PCB, and SEIAA within 02 months.
15. A primary survey of flora and fauna shall be carried out and data shall be submitted to the RO, PCB, and SEIAA within six months.
16. The hydro-geological study shall be carried out by a reputed organization/institute within six months and establish that mining in the said area will not adversely affect the groundwater

regime. The report shall be submitted to the RO, PCB, and SEIAA within six months. In case the adverse impact is observed /anticipated, mining shall not be carried out.

17. Adequate protection against dust and other environmental pollution due to mining shall be made so that the habitations (if any) close by the leased area are not adversely affected. The status of implementation of measures taken shall be reported to the RO, UPPCB, and SEIAA, and this activity should be completed before the start of sand mining.
18. Need-based assessment for the nearby villages shall be conducted to study economic measures which can help in improving the quality of life of an economically weaker section of society. Income-generating projects/tools such as the development of fodder farms, fruit-bearing orchards, vocational training, etc. can form a part of such a programme. The project proponent shall provide a separate budget for community development activities and income-generating programmes.
19. Green cover development shall be carried out following CPCB guidelines including the selection of plant species and in consultation with the local DFO/Horticulture Officer.
20. Separate stockpiles shall be maintained for excavated topsoil if any, and the topsoil should be utilized for green cover/tree plantation.
21. Dispensary facilities for first-aid shall be provided at the site.
22. The District Mining Officer should quarterly monitor compliance with the stipulated conditions. The project proponent will extend full cooperation to the District Mining Officer by furnishing the requisite data/information/monitoring reports. In case of any violations of stipulated conditions, the District Mining Officer will report to SEIAA.
23. The project proponent shall submit six-monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard & soft copies) to the SEIAA, the District Officer, and the respective Regional Office of the State Pollution Control Board by 1st June and 1st December every year.
24. A copy of the clearance letter shall be sent by the proponent to the concerned Panchayat, Zila Parishad/ Municipal Corporation, and Urban Local Body.
25. Transportation of materials shall be done by covering the trucks/tractors with tarpaulin or other suitable mechanisms to avoid fugitive emissions and spillage of minerals/dust.
26. Wastewater, from the temporary habitation campus, be properly collected & treated before discharging into water bodies the treated effluent should conform to the standards prescribed by MoEF/CPCB.
27. Measures shall be taken for control of noise level to the limits prescribed by C.P.C.B.
28. Special Measures shall be adopted to protect the nearby settlements from the impacts of mining activities. Maintenance of Village roads through which transportation of minor minerals is to be undertaken shall be carried out by the project proponent regularly at his own expense.
29. Measure for prevention & control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion, if any, shall be carried out with geotextile matting or other suitable material.
30. Under corporate social responsibility, a sum of 5% of the total project cost or total income whichever is higher is to be earmarked for the total lease period. Its budget is to be separately maintained. CER components shall be prepared based on the need of the local habitant. Income-generating measures which can help in the upliftment of poor section of society, consistent with the traditional skills of the people shall be identified. The programme can include activities such as the development of fodder farms, fruit-bearing orchards, free distribution of smokeless Chula, etc.
31. Possibility for adopting the nearest three villages shall be explored and details of civic amenities such as roads, drinking water, etc. proposed to be provided at the project proponent's expenses shall be submitted within 02 months from the date of issuance of Environment Clearance.
32. The funds earmarked for environmental protection measures should be kept in a separate account and should not be diverted for other purposes. Year-wise expenditure should be

reported to the Ministry of Environment and Forests and its Regional Office located at Lucknow, SEIAA, U.P, and UPPCB.

33. Action plan in respect to suggestion/improvement and recommendations made and agreed during Public Hearing shall be submitted to the District mines Officer, concerned Regional Officer of UPPCB and SEIAA within 02 months.
34. Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, if applicable to this project.
35. The proponent shall observe every 15 days for the nesting of any turtle in the area. Based on the observations so made, if turtle nesting is observed, necessary safeguard measures shall be taken in consultation with the State Wildlife Department. For this purpose, awareness shall be created amongst the workers about the nesting sites so that such sites, if any, are identified by the workers during operations of the mine for taking required safeguard measures. In this regards the safety notified zone should be left so that the habitat/nesting area is undisturbed.
36. The project proponent shall undertake adequate safeguard measures during extraction of river bed material and ensure that due to this activity the hydrogeological regime of the surrounding area shall not be affected.
37. The project proponent shall obtain the necessary prior permission of the competent Authorities for withdrawal of the requisite quantity of water (surface water and groundwater), required for the project.
38. Appropriate mitigative measures shall be taken to prevent pollution of the river in consultation with the State Pollution Control Board. It shall be ensured that there is no leakage of oil and grease in the river from the vehicles used for transportation.
39. Vehicular emissions shall be kept under control and regularly monitored. The vehicles carrying the mineral shall not be overloaded.
40. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche, etc. (MoEF circular Dated: 22-09-2008 regarding stipulation of condition to improve the living conditions of construction labour at the site).
41. Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. The occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures if needed.
42. A copy of the clearance letter shall be sent by the proponent to the concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban Local Body, and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
43. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Lucknow by e-mail.
44. The green cover development/tree plantation is to be done in an area equivalent to 20% of the total leased area either on the river bank or along the roadside (Avenue Plantation).
45. Debris from the river bed will be collected and stored at a secured place and may be utilized to strengthen the embankment.
46. Safety measures to be taken for the safety of the people working at the mine lease area should be given, which would also include a measure for treatment of bite of poisonous reptile/insect-like snake.
47. Periodical and Annual medical checkup of workers as per Mines Act and they should be covered under ESI as per rule.

Specific Conditions:

1. In the absence of replenishment study keeping in mind various orders issued by Hon'ble NGT and development works in the State, EC is transferred for a period of one year.
2. Permissible mining of river bed material (sand / bajri) shall be strictly limited to quantity and area mentioned in LOI or mining plan, whichever is lesser, and maximum mineable depth will be limited to as the approved mining plan. The permissible mineable material will be valid till one year from the date of transfer of the EC.
3. For subsequent period, PP shall submit fresh annual replenishment study to SEIAA, UP for amendment in EC for mineable quantity and maximum permissible depth for mining based on scientific findings of replenishment study. Such study shall be placed before SEAC for appraisal for next three years to assess rate of deposition and accordingly, mineable production capacity and depth can be prescribed based on trends analysis, provided it is found scientifically satisfactory by the SEAC. The placing of the study report SEAC is mandatory for initial three years.
4. Directions/suggestions given during public hearing and commitment made by the project proponent should be strictly complied.
5. A certificate from Forest Department shall be obtained that no forest land is involved in mining or as a route and if forest land is involved the project proponent shall obtain forest clearance and permission of Central and State Government as per the provisions of Forest (conservation) Act, 1980 and submit before the start of work.
6. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora fauna etc.
7. If the proposed project is situated in notified area of ground water extraction, where creation of new wells for ground water extraction is not allowed, requirement of fresh water shall be met from alternate water sources other than ground water or legally valid source and permission from the competent authority shall be obtained to use it.
8. Project Proponent should submit action plan for carrying out plantation at least @1,000 plants / ha of lease area. In this case, PP should prepare a plan, duly approved either by Forest Department or Horticulture Department, for planting at least 37,000 plants, either on government land or community land, within a periphery of 5 km from the boundary of the lease area along with provision for maintenance for 5 years. Survival of plants should not be less than the survival rate notified by Uttar Pradesh Forest Department otherwise it will be treated as violation of EC condition.
9. Department of Geology & Mines, GoUP in consultation with UPSPCB will establish required number of CAAQMS in district within a period of one year and submit geo-referenced map of these stations along with data. Details of existing CAAQMS, if any, be submitted within a period of three months.
10. Number of mining projects are coming up in the district. Department of Geology & Mines, GoUP to carry out regional EIA-EMP report including carrying capacity of environmental components to assess the capacity to further bear the pollution load for such areas within a period of 1 year and submit the same to SEIAA, UP for evaluation.
11. The project proponent shall ensure that if the project area falls within the eco-sensitive zone of National Park/ Sanctuary prior permission of the statuary committee of National Board for wildlife under the provision of Wildlife (Protection) Act, 1972 shall be obtained before commencement of work.
12. If in future this lease area becomes part of a cluster of equal to or more than 05 ha. then additional conditions based on the EIA shall be imposed. The leaseholder shall mandatorily follow cluster conditions otherwise it will amount to a violation of E.C. conditions. If the certificate related to the cluster provided by the competent authority is found false or

incorrect then punitive actions as per law shall be initiated against the authority issuing the cluster certificate.

13. The Environmental clearance will be co-terminus with the mining lease period.
14. Project falling within 10 KM area of Wild Life Sanctuary is to obtain a clearance from National Board Wild Life (NBWL) even if the eco-sensitive zone is not earmarked.
15. To avoid the ponding effect and adverse environmental conditions for sand mining in the area, progressive mining should be done as per sustainable sand mining management guidelines 2016.
16. Geo-coordinates should be verified by Director, DGM/District Magistrate/Regional Mining Officer/NHAI and should be submitted to SEIAA/SEAC, Secretariat as earliest.
17. In case it has been found that the E.C. obtained by providing incorrect information, submitting that the distance between the two adjoining mines is greater than 500mt. and the area is less than 05ha, but factually the distance is less than 500 mt, and the mine is located in a cluster of areas equal or more than 05ha, the E.C issued will stand revoked.
18. The project proponent shall in 2 years conduct a detailed replenishment study duly authenticated by a QCI-NABET accredited consultant, and the District Mines Officer which shall form the basis for the midterm review of conditions of Environmental Clearance.
19. The mining work will be open-cast and manual/semi-mechanized (subject to order of Hon'ble NGT/Hon'ble Courts (s)). Heavy machines such as excavators, scoopers, etc. should not be employed for mining purposes. No drilling/blasting should be involved at any stage.
20. It shall be ensured that there shall be no mining of any type within 03 m or 10% of the width which-ever is less, shall be left on both the banks of the precise area to control and avoid erosion of the riverbank. The mining is confined to the extraction of sand/moram from the river bank only.
21. The project proponent shall undertake adequate safeguard measures during extraction of river bank material and ensure that due to this activity the hydro-geological regime of the surrounding area shall not be affected.
22. The project proponent shall adhere to mining in conformity to the plan submitted for the mine lease conditions and the Rules prescribed in this regard clearly showing the no work zone in the mine lease i.e., the distance from the bank of the river to be left un-worked (Non-mining area), distance from the bridges, etc. It shall be ensured that no mining shall be carried out during the monsoon season.
23. The project proponent shall ensure that wherever deployment of labour attracts the Mines Act, the provision thereof shall be strictly followed.
24. The project proponent will provide personal protective equipment (PPE) as required, also provide adequate training and information on safety and health aspects. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For this purpose, a schedule of health examinations of the workers should be drawn and followed accordingly.
25. The critical parameters such as PM10, PM2.5, SO2, and NOx in the ambient air within the impact zone shall be monitored periodically. Further, the quality of discharged water if any shall also be monitored [(TDS, DO, pH, Fecal Coliform and Total Suspended Solids (TSS)].
26. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads.
27. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
28. The extended mining scheme will be submitted by the proponent before the expiry of the present mining plan.
29. The self-environmental audit shall be conducted annually. Every three years third-party environmental audit shall be carried out.

30. Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for monitoring PM10, PM2.5, SO2, and NOx. The location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
31. The common road for transportation of minerals is to be maintained collectively. The total cost will be shared/worked out based on lease area among users.
32. The proponent will provide adequate sanitary facilities in the form of mobile toilets to the labours engaged in the project work.
33. Solid waste material viz., gutkha pouches, plastic bags, glasses, etc. to be generated during project activity will be separate storage in bins and managed as per Solid Waste Management rules.
34. Green area/belt to be developed along haulage road in consultation with Gram Sabha/Panchayat.
35. Natural/customary paths used by villagers should not be obstructed at any time by the activities proposed under the project.
36. Digital processing of the entire lease area in the district using remote sensing techniques should be done regularly once in three years for monitoring the change of river course by the Directorate of Geology and Mining, Govt. of Uttar Pradesh. The record of such study to be maintained and report be submitted to Regional office of MoEF, SEIAA, U.P., and UPPCB.
37. A copy of the clearance letter will be marked to the concerned Panchayat / local NGO, if any, from whom suggestion/representation has been received while processing the proposal. The clearance letter shall also be put on the website of the company.
38. State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industry Centre, and Collector's office/Tehsildar's Office for 30 days.
39. The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at the web site of the SEIAA at http://www.seiaaup.in and a copy of the same shall be forwarded to the Regional Office of the Ministry located in Lucknow, CPCB, State PCB.
40. The MoEF/SEIAA or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environmental protection.
41. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
42. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act, 1997.
43. Wastewater from potable use should be collected and reused for sprinkling.
44. During the school opening and closing time, vehicle movement will be restricted.
45. A width of not less than 50 meters or 10% width of the river can be restricted for mining activities from the river bank. A condition can be imposed that mining will be done from river activities from the river bank.

You shall also ensure that the proposed site is not a part of any no-development zone as required/prescribed/identified under law. In case of violation, this permission shall automatically deem to be cancelled. Also, in the event of any dispute on ownership or land use of the proposed site, this clearance shall automatically deem to be cancelled.

Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

The above stipulated conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the

Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along-with their amendments and rules made there under and also any other orders passed by the Hon'ble Courts of Law relating to the subject matter.

The project proponent will have to submit approved plans and proposals incorporating the conditions specified in the Environmental Clearance within 03 months of issuance of this clearance. The SEIAA/MoEF reserves the right to revoke the environmental clearance, if conditions stipulated are not implemented to the satisfaction of SEIAA/MoEF. SEIAA may impose additional environmental conditions or modify the existing ones, if necessary.

This is to request you to take further necessary action in matter as per provisions of Gazette Notification No. S.O. 1533(E) dated 14/09/2006, as amended and send regular compliance reports to the authority as prescribed in the aforesaid notification.

Copy, through email, for information and necessary action to –

1. **The Principal Secretary, Department of Environment, Forest and Climate Change, Government of Uttar Pradesh, Lucknow (email – soenvups@rediffmail.com)**
2. **Joint Secretary, Ministry of Environment, Forest and Climate Change, Government of India, 3rd Floor, Prithvi-Block, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003 (email – sudheer.ch@gov.in)**
3. **Deputy Director General of Forests (C), Integrated Regional Office, Ministry of Environment, Forest and Climate Change, Kendriya Bhawan, 5th Floor, Sector "H", Aliganj, Lucknow – 226020 (email – rocz.lko-mef@nic.in)**
4. **Director, Geology & Mining, Uttar Pradesh, Khanij Bhawan 27/8, Raja Ram Mohan Rai Marg, Lucknow-226001 (email - dgmupexp@gmail.com)**
5. **District Magistrate, Hamirpur, Uttar Pradesh.**
6. **Member Secretary, Uttar Pradesh Pollution Control Board, TC-12V, Paryavaran Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow-226010 (email – ms@uppcb.com)**
7. **Copy to Web Master for uploading on PARIVESH Portal.**
8. **Copy for Guard File.**

(Ajay Kumar Sharma)
Member Secretary, SEIAA

Nature Protects if She is Protected

ANNEXURE – 07

Environmental Compensation calculated by UPPCB

List of Sand Mining Lease Holders Mantioned in O.A. No. 393/2022 Ashis Kumar Dwevedi Vs State of U.P. and Others							
S.No.	**Paticulars**	**Calculation of environmental compensation done by up PCB for the period of operation without valid consent**					
		1	**2**	**3**	**4**	**5**	**6**
1	Name and address of Lease holder	Kailash Singh Yadav, Owner, House No. 1095, Uphar Colony, Sector-3, Utharethiya, Raibareli Road, Lucknow	Anil Dixit Son of Shri Radhe Syam Dixit, Geru Wala Bangla, Tyagi Nager, Morar, Gwalior . M.P. 474006	Mithilesh Kumar Gupta S/o Shri Mahendra Kumar Gupta, 128/380, K Block Kidwai Nagar District Kanpur U.P. 208011	Sailendra Yadav, Kaushal Colony, Malli Bmouri Post Dambandunga Tehsil Haldwani District Nainital	Shrikant Gupta S/o Shri Prakash Seth, H. No. - 146, Kailash Residency Galla Mandi Road , Jhansi.	Anand Kumar Gupta S/o Shri Laxmi Narayan Gupta, Maharajpur District- Kanpur Nagar 208002
2	**Name and location of mining place**	**Pahlwan Traders, Khand No-23/7, Vill-Bedi Kharka, Tehsil- Sarila, District-Hamirpur**	**Shri Kanha Constructions Company Khand No-23/13, Vill-Bedi Kharka, Tehsil- Sarila, District-Hamirpur**	**Annpurna Udhyog Khand No-10/22, Vill-Bedi , Tehsil- Beri, District-Hamirpur**	**Khand No-31/4, Vill-Patiyora , Tehsil-Hamirpur, District-Hamirpur**	**Khand No-24/13, Vill-Chikasi , Tehsil- Sarila, District- Hamirpur**	**Khand No-24/17(old khand- 24/16), Vill-Chikasi , Tehsil- Sarila, District- Hamirpur**
3	Issued date of Environmental Clearance by SEIAA	Issued vide Letter No. 503/Parya/SEAC/4141/2018 Dated 24.11.2018 by SEIAA	Issued vide Letter No. 493/Parya/SEAC/4192/2018 Dated 24.11.2018 by SEIAA	Issued vide Praposal No. SIA/U.P./MIN/28157/2018 & SEIAA, UP File No. 4390 Dated 14.12.2021 by SEIAA	Issued vide Letter No. 382/Parya/SEIAAA/4412/2019 Dated 13.10.2020 by SEIAA	Issued vide Letter No. 455/Parya / SEAC/4713-4464/2019 Dated 12.12.2019 by SEIAA	Issued vide Letter No. 588/Parya/SEAC/4388/2019 Dated 08.02.2020 by SEIAA
4	Operation date of mining as per inforation provided by mine officer	**11.12.2018**	**11.12.2018**	**05.01.2022**	**13.01.2021**	**09.01.2020**	**24.03.2020**
5	Nos of mining operation days as per inforation provided by mine officer up to 30.06.2022	847	840	176	390	670	627
6	Consent duration during operation of mining	15.07.2022 to 31.12.2022	18.10.2020 to 31.12.2020	no consent	23.10.2020 to 31.12.2020	no consent	11.11.2020 to 31.12.2021
7	Nos of mining operation days with consent	0	75	0	70	0	326

8	Nos of mining operation days without consent up to 30.06.2022	847	765	176	320	670	301
9	**Pollution Index (PI)**	**80**	**80**	**80**	**80**	**80**	**80**
10	**Nos of days from which the noncompliance has been observed (N)**	**847**	**765**	**176**	**320**	**670**	**301**
11	**Factor Factor in rupees (R)**	**250**	**250**	**250**	**250**	**250**	**250**
12	**Factor for scale of operation (S)**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
13	**Location factor (LF)**	**1**	**1**	**1**	**1**	**1**	**1**
14	EC = PI×N×R×S×LF	PI×N×R×S×LF	PI×N×R×S×LF	PI×N×R×S×LF	PI×N×R×S×LF	PI×N×R×S×LF	PI×N×R×S×LF
14	**EC Amount (in Rs.)**	**80×847×250×0.5×1.0= 8470000.00**	**80×765×250×0.5×1.0= 7650000.00**	**80×176×250×0.5×1.0= 1760000.00**	**80×320×250×0.5×1.0= 3200000.00**	**80×670×250×0.5×1.0= 6700000.00**	**80×301×250×0.5×1.0= 3010000.00**

ANNEXURE – 08

Environmental Compensation calculated on total production quantity

Calculation of Environmental Compensation by Approach – II

1. Total Benefits (B) = Market Value of illegal extraction: D
    a. Where D = Z x Market Valueof-the-material-per-MT-or-m^3
    b. And Z = Excess/illegal Extraction
    c. Considered market value of the material as RS. 400/- per m^3
2. Total Ecological Costs (C) = Market Value adjusted for risk factor: D * RF
    a. Total 18-20 projects situated in Five clusters.
    b. The daily production has been carried out 2-13 times of permitted quantity by these lease holders.
    c. Hence, considering collective impact on river water quality and ecology, the Risk Factor (RF) is considered in the category of Severe.
    d. Therefore, considered RF=1
    e. $$PV = \sum_{t=1}^{5} \frac{(D+RT)}{(1+r)t}$$
    f. Net Present Value (after netting out market value of illegally mined material)
    g. Therefore, Total Compensation to be levied

$$NPV = PV - D$$

3. The Calculations of Environmental Compensation is illustrated in table given below

Calculation of Environmental Compensation for the overall production

Unit Name	Total Production Quantity (m3)	Present Value (PV) @5% under Severe severity							Total (PV)	Net Present Value (NPV) (Rs.)
		Market Value of illegally mined material @ Rs.400/m3	Annual Value of Foregone Ecological Values (Rs.) RF = 1	Year 01	Year 02	Year 03	Year 04	Year 05		
		D	D* R.F.	D*RF/(1+0.05)^1	D*RF/(1+0.05)^2	D*RF/(1+0.05)^3	D*RF/(1+0.05)^4	D*RF/(1+0.05)^5		PV-D
Pehlwan Khand No. 23/7	680983	272393200	272393200	259422095.24	247068662.13	235303487.74	224098559.76	213427199.77	1179320004.64	**906926805**
Khana Khand No. 23/13	432260	172904000	172904000	164670476.19	156829024.94	149360976.14	142248548.70	135474808.29	748583834.26	**575679834**
Shailendra Yadav Khand No. 31/4	597640	239056000	239056000	227672380.95	216830839.00	206505560.95	196671962.81	187306631.25	1034987374.97	**795931375**
Shrikant Gupta Khand No. 24/13	837270	334908000	334908000	318960000.00	303771428.57	289306122.45	275529640.43	262409181.36	1449976372.81	**1115068373**
Anand Kumar Khand No. 24/17	1859732	743892800	743892800	708469333.33	674732698.41	642602569.92	612002447.54	582859473.85	3220666523.05	**2476773723**
Annpurna Khand No. 10/22	465694	186277600	186277600	177407238.10	168959274.38	160913594.64	153251042.52	145953373.83	806484523.46	**620206923**

ANNEXURE A-8

SPEED POST

F.No. B-29012/MSMEs/IPC-VI/2017-18/ 12189-12230 November 01, 2018

To

The Chairman
All SPCBs/PCCs

SUB: DIRECTIONS UNDER SECTION 18(1)(b) OF THE WATER (PREVENTION & CONTROL OF POLLUTION) ACT, 1974 and THE AIR (PREVENTION & CONTROL OF POLLUTION) ACT, 1981 REGARDING STREAMLINING OF CONSENT MECHANISM.

WHEREAS, under Section 17 of the Water (Prevention & Control of Pollution) Act, 1974, and under Section 17 of the Air (Prevention & Control of Pollution) Act, 1981, one of the functions of State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) is to plan a comprehensive programme for the prevention, control or abatement of pollution of streams, wells and air pollution in the States/ Union Territory and to secure the execution thereof;

WHEREAS, under Section 16 of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 16 of the Air (Prevention & Control of Pollution) Act, 1981, one of the functions of the Central Pollution Control Board (CPCB), constituted under Water (Prevention and Control of Pollution) Act, 1974 is to coordinate activities of the State Pollution Control Boards and Pollution Control Committees and to provide technical assistance and guidance to SPCBs / PCCs;

WHEREAS, as per the Section 25 of Water Act, 1974, no person shall, without the previous consent of the State Board, establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land (such discharge being hereafter in this section referred to as discharge of sewage). Further as per Section 26, where immediately before the commencement of this Act any person was discharging any sewage or trade effluent into a stream or well or sewer or on land, the provisions of section 25 shall, so far as may be, apply in relation to such person as they apply in relation to the person referred to in that section subject to the modification that the application for consent to be made under sub-section (2) of that section shall be made on or before such date as may be specified by the State Government by notification in this behalf in the Official Gazette;

WHEREAS, as per the Section 21 of Air Act, 1981, no person shall, without previous consent of the State Board, establish or operate any industrial plant in an air pollution control area;

WHEREAS, SPCBs/PCCs are responsible for prescribing consent application form and consent fees. It is observed that most of the SPCBs/PCCs are issuing Consent to Establish (CTE) followed by Consent to Operate (CTO);

WHEREAS, industries falling under 'Category A' and 'Category B' of the Schedule of EIA Notification, 2006, are required to take Environmental Clearance from MoEF&CC or State Level Environment Impact Assessment Authority;

WHEREAS, obtaining Consent to Establish (CTE) is not a pre-requisite for obtaining EC from State Level or Central Level EIA Authority, under EIA Notification, 2006;

WHEREAS, there may not be value addition in CTE after obtaining EC as most of the conditions laid down in EC and CTE are similar in nature;

WHEREAS, CPCB vide letter dated 02.02.2017 issued an advisory to all the SPCBs/PCCs to follow the modified mechanism for granting consent to various categories of industries which is given below:

> *"All the projects requiring Environmental Clearance may be exempted from obtaining the Consent to Establish (CTE). Such projects may be directly granted Consent to Operate subject to EC and installation of pollution control devices";*

WHEREAS, CPCB re-categorised the industrial sectors into Red, Orange, Green and White Category, based on the pollution index and issued directions u/s 18(1)(b) of the Water and Air Acts to all the SPCBs/PCCs on 07.03.2016 for its adoption. Based on the pollution index, 63 industrial sectors are covered under green category and 36 industrial sectors are covered under newly introduced white category. Further, CPCB in its direction mentioned that addition of any new or left-over industrial sectors and their categorisation, which is not listed in the revised list of red, orange, green and white industrial sectors, shall be done at the level of concerned SPCB/PCC following the criteria and guidelines laid down by CPCB;

WHEREAS, Ministry of Environment, Forest and Climate Change, Government of India notifies standards for emission or effluent from various categories of Industries under the Environment Protection Act, 1986;

WHEREAS, State Pollution Control Boards and Pollution Control Committees in States and Union Territories respectively are required to ensure the compliance of these standards;

WHEREAS, it has been observed that SPCBs/PCCs have different mechanism for selection of industries for compliance verification of environmental norms;

WHEREAS, the issue of exemption of CTE for those projects, which require EC, again came up for discussion during 8th SPCBs/PCCs Review Meeting, held on 25.10.2018 through video conferencing, and while there was a general consensus that such an approach could be adopted, SPCBs/PCCs also raised the issue that they should be involved in the environmental clearance granting process;

WHEREAS, it was agreed that SPCBs/PCCs shall categorize the new/left over industrial sectors under green and white category and issue the expanded

list of green and white categories of industries, which are being operated in their State/UT. It was also discussed that environmental surveillance of industries should be on random basis, and SPCBs/PCCs shall evolve mechanism for that;

NOW THEREFORE, in view of the above and exercising the powers conferred to Central Pollution Control Board under Section 18(1)(b) of the Water (Prevention & Control of Pollution) Act, 1974, and 18(1)(b) of the Air (Prevention & Control of Pollution) Act, 1981, following directions are issued for regulation of industries including MSMEs;

a) For industries requiring EC, issuing of consent by SPCBs/PCCs shall be one-step process and EC will be deemed as CTE in such cases. SPCBs/PCCs shall be involved in the process of granting of EC.

b) SPCBs/PCCs shall issue the expanded list of green and white categories of industries incorporating new/left over industrial sectors, which are being operated in their State/UT within a month.

c) Inspections for compliance verification of environmental standards by SPCBs/PCCs shall be random and based on risk assessment. SPCBs/PCCs shall develop mechanism for random selection of industries for inspection purpose including self-certification.

The SPCBs/PCCs shall acknowledge the receipt of the directions and submit the action taken report (ATR) in compliance of these directions to CPCB within one month from receipt of directions.

(S. P. Singh Parihar)
Chairman

Copy to:

1. The Joint Secretary (CP Division)
   Ministry of Environment, Forests & Climate Change
   Indira Paryavaran Bhawan
   3rd Floor, Prithivi, Aliganj, Jor Bagh Road
   New Delhi -110 003

2. All Regional Directorates, CPCB
3. DH, IT Division, CPCB *(with a request to upload the copy of Directions on CPCB website)*

(Prashant Gargawa)

ANNEXURE A-9

CIVIL APPEAL NO. 7008/2022

SYNOPSIS

The present Civil Appeal is being preferred u/s 22 of the NGT Act, 2010, being aggrieved by the Impugned Judgment dated 11.05.2022, passed by the Hon'ble National Green Tribunal, Principal Bench, New Delhi *(hereinafter referred to as the 'Hon'ble Tribunal or Hon'ble NGT')* in Original Application No. 249 of 2021.

The Hon'ble Tribunal vide the Impugned Judgment has held that the Sand Mining activity conducted by the Appellant without the Consent to operate (CTO) under the Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974 *(hereinafter referred to as the 'Air/ Water Acts')*, amounts to illegal mining for the purposes of Section 21(5) of the Mines and Mineral (Development and Regulation) Act, 1957 *(hereinafter referred to as the 'MMDR Act')* wherein compensation equal to *100%* of the mined material was directed to be levied.

It is submitted that the above directions amount to triple jeopardy and practically punishes the Appellant thrice for the same alleged irregularity, in as much as, in respect of the same Sand

Mine and the very same alleged violation (i.e. conducting mining activity without the requisite consent (CTO) under the Air/ Water Acts), the Hon'ble Tribunal, Principal Bench (same bench) had vide its Judgment dated 10.05.2022 directed the UPPCB to impose environmental compensation for illegal mining on the Appellant as per the *formulae* envisaged by the Hon'ble NGT in the case of *NGT Bar Association v. Virender Singh*. Furthermore, the UPPCB had imposed an environmental compensation/ penalty amounting to Rs.7,70,000/- under the Air/ Water Acts, which has admittedly been duly paid by the Appellant to the complete satisfaction of the UPPCB, a fact brought to the notice of the Hon'ble NGT, however the same was not considered.

Notably, this Hon'ble Court was pleased issue Notice in Civil Appeal No. 2013/2022 filed by the Appellant against the Judgment dated 10.05.2022 and has stayed the same, subject to a deposit of Rs.2,00,00,000/- (Rupees two crores only).

That the entire factual basis of the Impugned Judgment dated 11.05.2022 is that the Appellant conducted Sand mining activities for a period of 77 days without obtaining CTO under the Water/

Air Acts. The Appellant herein challenges the very applicability of the Water/ Air Acts to Sand Mining operations, in as much as, the activity of Sand Mining by which only an excavator machinery (JCB) is used cannot be construed to be an *'industrial plant/ Plant'* for the purposes of Section 21 of the Air Act, 1981, and furthermore, such Sand Mining activities do not attract the provisions of Section 25 of the Water Act, 1974 since there is no discharge of sewage or trade affluents into a stream or well or sewer.

Even otherwise, it is submitted that the Appellant cannot be subject to pay compensation three times, let alone under the provisions of Section 21(5) of the MMDR Act which is not attracted to the facts of the present case, since the mining was conducted under a Valid Mining lease and after duly taking a prior Environmental Clearance (EC) under the EIA Notification 2006.

The Present Civil Appeal raises the following Substantial questions of law relating to the Environment, which are *res integra*:

- Whether a person can be subjected to pay compensation three times for not obtaining CTO under the Air/Water Acts, i.e. under the Section 21(5) of the MMDR Act, under the *formule* for environmental compensation under the Hon'ble Tribunal's Judgment in the case of *'NGT Bar Association v. Virender Singh'*, and the independent procedure prescribed under the Air/ Water Acts?
- Whether a Consent to Operate (CTO) is required for conducting the activity of Sand Mining under the provisions of the Water Act 1974, in as much as, there is no *discharge of sewage* or any *trade effluents* into a stream, well or sewer during Sand Mining operations?
- Whether a Consent to Operate (CTO) is required for conducting the activity of Sand Mining under the provisions of the Air Act 1974, in as much as, the said activity does not require setting up or operation of an *'industrial plant/ plant'*?
- Whether Environmental Compensation can be imposed under the provisions of Section 21(5) of the MMDR Act in a

case where valid Mining Lease and Environmental Clearance was granted in favour of the project proponent?

- Whether the Hon'ble NGT has mis-interpreted the Judgment passed by this Hon'ble Court in *Common Cause v. UOI*, 2017 (9) SCC 499 to hold that mining without the requisite permissions under the Air/ Water Acts, amounts to mining without lawful authority and attract the invocation of Section 21(5) of the MMDR Act?

BRIEF FACTS

I. The Respondent No. 2 issued E-Auction Notice in respect of Gata No. 1, Village Bhartakorsi, Tehsil Behat, District Saharanpur, U.P (*hereinafter referred to as "the said mine"*) admeasuring 36.00 Hectares, for excavation/mining of about 7,56,000/- cubic meter per annum of sand, bajri and boulder.

II. The Appellant was declared the successful bidder and a Letter of Intent (LOI) dated 30.12.2019 was issued in favour of the Appellant for a period of 5 years.

III. On an application filed by the Appellant seeking prior Environmental Clearance, the Respondent No.5, SEIAA

after considering the detailed EIA Study/ EMP, granted an Environment Clearance (EC) dated 26.03.2021 in favour of the Appellant.

It is trite to mention that the said EC dated 26.03.2021 did not require the Appellant to obtain a Consent to Operate (CTO) from the Respondent No. 1, UPPCB under the provisions of either the Air or the Water Act. It is further submitted that no such condition was mentioned within the Mining Lease, Mining Plan or any other document that formed part of compliance of environmental sanctions.

IV. The Respondent No. 2, State of U.P, Geology and Mining Department executed a Mining Lease for a period of 01.04.2021 to 31.03.2026 (5 years) in favour of the Appellant for the said mine.

V. An Appeal No. 15/2021 tilted *'Promod v. State of U.P.'* was filed before the Hon'ble NGT, seeking setting aside of the EC dated 26.03.2021 issued in favour of the Appellant in respect of the said Mine located at Gata No. 1, Village Bhartakorsi, Tehsil Behat, District Saharanpur, U.P. The

Hon'ble NGT vide its Order dated 9.06.2021 constituted a Four-member Committee comprising of the CPCB, State PCB, MOEF&CC and District Magistrate, Saharanpur to furnish its report on the averments made and grounds raised in Appeal No. 15/2021.

VI. The Appellant approached the Respondent No. 1, UPPCB vide Application dated 17.06.2021 seeking Consent to Operate under the Air/ Water Acts.

VII. The Respondent No. 1, UPPCB vide Representation dated 17.07.2021 sought details qua the mining carried out till date by the Appellant along with the requisite clearances issued in favour and possession of the Appellant. The Appellant submitted a Reply Affidavit dated 03.08.2021 furnishing such details as required.

VIII. The Respondent No. 1, UPPCB issued Show Cause Notice dated 09.09.2021 imposing Rs.10,000/- fine per day on the Appellant for the period 01.04.2021 to 17.07.2021 i.e 77 days towards mining conducted by the Appellant without a CTO under the Air/ Water Acts.

IX. The Respondent No. 9, Daljeet Singh filed OA No. 249 of 2021 seeking various reliefs *inter alia* for imposition of Environmental Compensation on the Appellant as per the procedure/ *formulae* laid down in ***NGT Bar Association vs Vijender Singh,*** *O.A No. 360 of 2015* by the Hon'ble NGT.

X. The Appellant, in good faith and with bona fide intentions, deposited Rs. 7,70,000/- as per the demand raised by the Respondent No. 1, UPPCB vide Show Cause Notice dated 09.09.2021.

XI. Subsequently, the Respondent No. 1, UPPCB vide Order dated 30.12.2021 issued the Consent to Operate (CTO) under Section 21/22 of the Air Act, 1981 and Section 25/26 of the Water Act, 1974, in favour of the Appellant.

XII. The Hon'ble National Green Tribunal vide Judgment dated 10.05.2022 in Appeal No. 15/2022, accepted the Report of the 4-member Joint Committee to the effect that the Appellant was carrying on mining operations in the said Mine without the requisite CTO under the Air/ Water Acts, and accordingly directed the UPPCB to enhance the

compensation which may be deposited by the project proponent i.e. the Appellant herein.

XIII. The Hon'ble National Green Tribunal vide the Impugned Final Order/Judgment dated 11.05.2022 in OA No. 249/2021 directed that compensation for illegal mining, equal to the value of mined material as per Section 21(5) of the MMDR Act and the Judgment of this Hon'ble Supreme Court in *Common Cause v. UOI*, 2017 (9) SCC 499 ought to be levied by the State PCB against the Appellant. The Hon'ble Tribunal further held that Appellant is in addition to the above, is also liable to pay the compensation under the provisions of the Air/ Water Acts.

It is submitted that the Impugned Judgment was passed by the Hon'ble Tribunal in the absence of any Reply/ Report filed by the Joint Committee constituted by the Hon'ble Tribunal itself vide Order dated 28.10.2021 in OA No. 249/2021. Furthermore, the Hon'ble Tribunal did not consider whether the Appellant under the provisions of the Air/ Water Act was even required to take a CTO for

conducing Sand Mining operations, and proceeded on the assumption that the provisions of Water/ Air Act was attracted, to the serious prejudice of the Appellant.

XIV. This Hon'ble Court vide its Order dated 12.08.2022 was pleased to issue notice in Civil Appeal No. 5013/2022 filed by the Appellant being aggrieved by the Judgment dated 10.05.2022 passed by the Hon'ble NGT in Appeal No. 15/2022. Furthermore, this Hon'ble Court stayed the operations of the said Judgment dated 10.05.2022 subject to deposit of Rs.2,00,00,000/- (Rupees two crores).

The Appellant is constrained to institute the present Civil Appeal on the following amongst grounds:-

A. TRIPLE JEOPARDY – PENALTY/ COMPENSATION ALREADY IMPOSED ON THE APPELLANT IN RESPECT OF THE SAME MINE & FOR THE SAME VIOLATION

The Hon'ble Tribunal vide the Impugned Judgment held that the mining conducted by the Appellant without the requisite consents (CTO) under the Air/ Water amount to illegal

mining for the purposes of the MMDR Act, 1957 wherein compensation equal to the mined material was directed to be levied as per Section 21(5) of the MMDR Act.

It is submitted that the Hon'ble Tribunal vide its Judgment dated 10.05.2022 in Appeal No. 15/2021 (same bench) in respect of the same Sand Mine and the very same alleged violation had directed the UPPCB to impose compensation on the Appellant. This Hon'ble Court was pleased issue Notice in Civil Appeal No. 2013/2022 filed by the Appellant against the Judgment dated 10.05.2022 and has stayed the same, subject to a deposit of Rs. 2,00,00,000/- (Rupees two crores only).

Furthermore, the UPPCB had imposed an environmental compensation/ penalty amounting to Rs. 7,70,000/- under the Air/ Water Acts, which has admittedly been duly paid by the Appellant to the complete satisfaction of the UPPCB.

The Appellant submits that the above-mentioned fact situation, amounts to triple jeopardy and practically punishes the Appellant thrice for the same alleged irregularity.

It is submitted that the Air/ Water Acts are complete codes in themselves which have an overriding effect on all other laws under Sections 52 and 60 of the said Acts, respectively. Apropos, Section 37 and 44 of the Air/ Water Acts, stipulate for penalty in case of breach of the provisions of the said Acts. Even otherwise the Air/ Water Acts being special acts are superseding over general acts like MMDR Act which is a provision in case of unlawful or illegal mining and that the same is inapplicable in the present case.

B. <u>CONSENT TO OPERATE (CTO) UNDER THE AIR/WATER ACTS IS NOT REQUIRED FOR SAND MINING ACTIVITY</u>

It is submitted that under the provisions of the Air/ Water Acts, there is no statutory mandate to take CTO for conducting Sand Mining. The Mining Lease, the Environment Clearance dated 26.03.2021 or any other document issued by the Respondent No. 5, SEIAA, UP or any other statutory body does not require the Appellant to take such CTO from the UPPCB.

- **WATER ACT**

That Section 25 of the Water Act, 1974 *interalia* states that, *'no person shall, without the previous consent of the State Board, establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land'.*

That during the activity of Sand mining/ excavation of sand, there is no discharge of sewage or trade affluents into a stream or well or sewer, whatsoever. A perusal of the Mining Plan as well as the EC clearly prohibits any in stream mining, and also ensures that the mining is always above the ground water level.

- **AIR WATER**

That as per Section 21 of the Air Act, 1981, *'no person shall, without the previous consent of the State Board, establish or operate any industrial plant in an air pollution control area'.* Under Section 2(k) of the Act, the expression

'industrial plant' is defined, *'means any plant used for any industrial or trade purpose and emitting any air pollutant into the atmosphere'.*

The Appellant submits that during the activity of Sand mining/ excavation of sand, only an excavator machinery (JCB) is used which cannot remotely be construed as an *'Industrial plant/ Plant'* for the purposes of Section 21 of the Air Act, 1981. Thus, the Appellant was never required to take a CTO under the Air/ Water Acts, and this removes the very *genesis* of the Impugned Judgment.

It is trite to submit that the SEIAA, Bihar in an Affidavit filed before the Hon'ble NGT, EZ in OA No. 79/2019/EZ admitted that Sand mining activity does not strictly come within the purview of industry and stated as under:

"26... I aver that the Statement made in paragraph No. 27 is responded to in view of the fact that there is no illegality in grant of EC without consent to Operate. It is stated that all the conditions necessary are duly incorporated in the EC. It is stated that sand mining activity does not strictly come within the purview of industry. However, on this score, the Pollution Control Board may also give some elucidation"

EIA, 2006 covers all aspects of impact of Sand Mining on Air/ Water Environment

It is submitted that the Environmental Impact Assessment Notification dated 14.09.2006 (EIA, 2006) is a complete code in itself which conclusively and exhaustively deals with aspect of impact of sand mining, on the Air and Water Environment.

Under Schedule 1(a) of the EIA, 2006 read with the Judgment passed by this Hon'ble Court in *Deepak Kumar*, all mining leases of minor/major minerals (irrespective of size) mandatorily requires an Environmental Clearance (EC) which entails an Environmental Impact Assessment (EIA) study and a Environmental Management Plan (EMP).

The requisite Form 1 under the EIA, 2006 records the impact of sand mining activity on the air, water and land environment as a whole. Furthermore, the EIA Study makes a comprehensive and detailed assessment of such impact after a scientific study whereinafter the EMP provides

mitigation measures ensuring that the sand mining activity is conducted in an environmentally sustainable manner.

The aforesaid is submitted to dispel any impression that the non-applicability of the Air/ Water Acts to Sand Mining activities would have an adverse impact of the Environment, in as much as, the same is exhaustively and thoroughly dealt with under the EIA, 2006, albeit in a broader/ more far-fetched manner than under the Air/ Water Acts.

It is pertinent to clarify that the Appellant restricts its above argument to Mining of Sand only, and not to any other Major or Minor mineral, as the mining of other minerals unlike sand requires some sort of a permanent structure or plant and/or discharge of effluents etc…

C. **SECTION 21 OF MINES AND MINERALS (DEVELOPMENT AND REGULATION) ACT, 1957 IS NOT APPLICABLE IN CASE OF ABSENCE OF CTO UNDER THE AIR/ WATER ACTS**

(WITHOUT PREJUDICE TO SUBMISSION A & B)

The Hon'ble Tribunal has directed compensation to be levied under Section 21(5) of the MMDR Act on a wrong

interpretation and misreading of the Judgment passed by this Hon'ble Court in the case of ***Common Cause vs Union of India***, *(2017) 9 SCC 499,* wherein the provisions of Section 21(5) were held to be attracted only in cases where the mining has been conducted without an Environmental Clearance (EC) and/or Forest Clearance (FC), or in excess of the quantity permissible under the mining plan or EC.

The Relevant paras of the Judgment passed in *Common Cause* are extracted as under:

*"**151**... As far as the mining lease area is concerned, extraction of a mineral over and above what is permissible under the mining plan or under the EC undoubtedly attracts the provisions of Section 21(5) of the MMDR Act being extraction without lawful authority....*

***186**... We make it clear that mineral extracted either without EC or without an FC or without both would attract the provisions of Section 21(5) of the MMDR Act and 100% of the price of the illegally or unlawfully mined mineral must be compensation by the mining leaseholder...*

***188**. To avoid any misunderstanding, confusion or ambiguity, we make the following very clear:*

(6) with effect from 14-9.2006 all mining projects having a lease area of more are requisites to have an EC. The extraction of any mineral in such a case without an EC would amount to illegal or unlawful mining attracting the provisions of Section 21(5) of the MMDR Act.

(8) Any mining activity carried on after 7-1-1998 without an FC amounts to illegal or unlawful mining in terms of the provisions of Section 21(5) of the MMDR Act attracting 100% recovery of the price of the extracted mineral that is disposed of..."

Thus, the Hon'ble Tribunal has wrongly applied the judgment passed by this Hon'ble Court in the case of *Common Cause* (supra) and imposed compensation under Section 21(5) of the MMDR Act, 1957. It is submitted that this Hon'ble Court while passing the Judgment in the case of *Common Cause*, considered the provisions of the Air/ Water Acts and consciously did not extend the applicability of Section 21(5) MMDR to cases of violation under the said Acts.

The Appellant further submits that it, admittedly conducted the mining activity after taking a prior Environmental Clearance and under a Valid Mining lease after paying the requisite Royalty under the prevalent law/ State Concession Rules. Thus, imposing penalty/ environmental compensation over and above the penalty under the Air/ Water Acts, would even otherwise be highly exorbitant, excessive and

disproportionate, apart from being arbitrary and unreasonable. Such an expansive interpretation to Section 21(5) otherwise would fall foul of Article 14, in as much as, the Appellant would apropos be equated with those who have conducted mining without any mining lease and/or EC whatsoever.

Hence the present Civil Appeal.

ITEM NO.27 COURT NO.4 SECTION XVII

S U P R E M E C O U R T O F I N D I A
RECORD OF PROCEEDINGS

ANNEXURE A-10

CIVIL APPEAL Diary No(s). 26439/2022

(Arising out of impugned final judgment and order dated 11-05-2022 in OA No. 249/2021 passed by the National Green Tribunal)

M/S STAR MINES Petitioner(s)

VERSUS

UTTAR PRADESH POLLUTION CONTROL BOARD & ORS. Respondent(s)

(IA No.133449/2022-EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.133448/2022-STAY APPLICATION and IA No.133450/2022-EXEMPTION FROM FILING O.T. and IA No.133447/2022-CONDONATION OF DELAY IN FILING APPEAL and IA No.133699/2022-PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

Date : 26-09-2022 This petition was called on for hearing today.

CORAM :
HON'BLE MR. JUSTICE S. ABDUL NAZEER
HON'BLE MR. JUSTICE V. RAMASUBRAMANIAN

For Petitioner(s) Mr. Dama Sheshadri Naidu,Sr.Adv.
Mr. Vanshdeep Dalmia, AOR
Mr. Suchakshu Jain,Adv.
Ms. Shreya Chugh,Adv.
Ms. Shevali Chaudhary,Adv.

For Respondent(s) Mr. Ajit Sharma, AOR

UPON hearing the counsel the Court made the following

O R D E R

Applications for exemption from filing certified copy of the impugned judgment and exemption from filing official translation are allowed.

Delay condoned.

Issue notice.

Signature Not Verified
Digitally signed by DEEPAK SINGH
Date: 2022.09.29 17:31:39 IST
Reason:

Liberty is granted to serve the standing counsel, in addition.

However, we permit the U.P.Pollution Control Board to proceed with the assessment of compensation.

(ANITA MALHOTRA)
AR-CUM-PS

(KAMLESH RAWAT)
COURT MASTER

ITEM NO.24+56 COURT NO.15 SECTION XVII

S U P R E M E C O U R T O F I N D I A
RECORD OF PROCEEDINGS

ANNEXURE A-11

CIVIL APPEAL Diary No(s). 7176/2023

(Arising out of impugned final judgment and order dated 11-05-2022 in OA No. 249/2021 16-01-2023 in EA No. 29/2022 passed by the National Green Tribunal)

M/S BALAJI TRADING CO. Petitioner(s)

VERSUS

UTTAR PRADESH POLLUTION CONTROL BOARD & ORS. Respondent(s)

(IA No.39866/2023-CONDONATION OF DELAY IN FILING and IA No.39867/2023-EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.39870/2023-STAY APPLICATION and IA No.39873/2023-EXEMPTION FROM FILING O.T. and IA No.39877/2023-PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES

WITH
Diary No(s). 6051/2023 (XVII)
(IA No.43420/2023-EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.43419/2023-EX-PARTE STAY and IA No.43422/2023-EXEMPTION FROM FILING O.T. and IA No.43418/2023-CONDONATION OF DELAY IN FILING APPEAL and IA No.43424/2023-PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

AND

CIVIL APPEAL Diary No(s). 8496/2023
(IA No. 46546/2023 - CONDONATION OF DELAY IN FILING
IA No. 46545/2023 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT
IA No. 46549/2023 - EXEMPTION FROM FILING O.T.
IA No. 46544/2023 - PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES
IA No. 46547/2023 - STAY APPLICATION)

Date : 03-03-2023 These matters were called on for hearing today.

CORAM :
HON'BLE MR. JUSTICE V. RAMASUBRAMANIAN
HON'BLE MR. JUSTICE PANKAJ MITHAL

Signature Not Verified
Digitally signed by NIRMALA NEGI
Date: 2023.03.04 12:22:33 IST
Reason:

Petitioner(s) Mr. Shyam Divan, Sr. Adv.
Mr. Anand Varma, AOR
Mr. Devansh Malhotra, Adv.
Mr. Ayush Gupta, Adv.

Mr. Dama Sheshadri Naidu, Sr. Adv.
Mr. Vanshdeep Dalmia, AOR
Mr. Amit Upadhyay, Adv.
Mr. Natasha Dalmia, Adv.
Ms. Anisha Jain, Adv.
Ms. Shevali Chaudhary, Adv.
Mr. Hitesh, Adv.

Mr. Gopal Sankaranarayanan, Sr. Adv.
Mr. Anand Varma, AOR
Mr. Ayush Gupta, Adv.
Mr. Devansh Malhotra, Adv.
Ms. Shivani Vij, Adv.

For Respondent(s)

UPON hearing the counsel the Court made the following

O R D E R

Delay condoned.

Issue notice, returnable in six weeks.

Tag along with C.A. Diary No(s).26439/2022.

In the meantime, insofar as the compensation fixed under the impugned order is concerned, there will be an interim stay.

However, this interim stay will not enable non-operational units among the petitioners to start operations, unless they have obtained all clearances statutorily required.

We note that insofar as M/S Balaji Trading Co. is concerned the impugned order itself notes that it is operational by virtue of the consent and NOC granted. Therefore they may continue to operate.

(RADHA SHARMA)
COURT MASTER (SH)

(RENU BALA GAMBHIR)
COURT MASTER (NSH)

ITEM NO.26 COURT NO.15 SECTION XVII

S U P R E M E C O U R T O F I N D I A
RECORD OF PROCEEDINGS

ANNEXURE A-12

CIVIL APPEAL Diary No(s). 6348/2023

(Arising out of impugned final judgment and order dated 11-05-2022 in OA No. 249/2021 passed by the National Green Tribunal)

SANJAY BHATIA Petitioner(s)

VERSUS

UTTAR PRADESH POLLUTION CONTROL BOARD & ORS. Respondent(s)

(IA No.44446/2023-EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.44442/2023-STAY APPLICATION and IA No.44449/2023-CONDONATION OF DELAY IN FILING APPEAL and IA No.44451/2023-PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

WITH

Diary No(s). 6253/2023 (XVII)
(IA No.46604/2023-CONDONATION OF DELAY IN FILING and IA No.46597/2023-EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.46593/2023-STAY APPLICATION and IA No.46600/2023-EXEMPTION FROM FILING O.T. and IA No.46610/2023-PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

Diary No(s). 6267/2023 (XVII)
(IA No.48314/2023-CONDONATION OF DELAY IN FILING and IA No.48313/2023-EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.48312/2023-STAY APPLICATION and IA No.48310/2023-PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

Date : 20-03-2023 These petitions were called on for hearing today.

CORAM :
HON'BLE MR. JUSTICE V. RAMASUBRAMANIAN
HON'BLE MR. JUSTICE PANKAJ MITHAL

For Petitioner(s) Mr. Vanshdeep Dalmia, AOR
Ms. Anisha Jain, Adv.

For Respondent(s)

Signature Not Verified
Digitally signed by NIRMALA NEGI
Date: 2023.03.20 16:40:30 IST
Reason:

UPON hearing the counsel the Court made the following
O R D E R

Delay condoned.

Issue notice, returnable in six weeks.

Tag along with C.A. Diary No.7176/2023 with connected matters.

In the meantime, there shall be an interim stay of the impugned order, if the petitioner(s) has necessary clearances.

(RADHA SHARMA)
COURT MASTER (SH)

(RENU BALA GAMBHIR)
COURT MASTER (NSH)

ANNEXURE A-13

Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund

CENTRAL POLLUTION CONTROL BOARD
"Parivesh Bhawan", East Arjun Nagar,
Delhi-110032

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Abstract

Environmental compensation is a policy instrument for the protection of the environment which works on the Polluter Pay Principal. Environmental compensation has already been implemented in various countries, although limited in scope. Experiences from these implementations are mixed and tend to stress the importance of certain principles in order to achieve the overall objective of protection of the environment.

The Hon'ble National Green Tribunal through its various judgments has empowered the Central Pollution Control Board to lay down the methodology to assess and recover compensation for damage to the environment and utilize such amount in terms of an action plan for protection of the environment.

An attempt has been made by the CPCB in-house Committee to develop a methodology for assessing environmental compensation to be levied on concerned industry, authority, individual etc. for the protection of environment. Expert institutions/ NGOs like The Energy and Resources Institute, Centre for Science and Environment-India, Institute of Economic Growth etc. were also consulted to finalize the report. Overall objective is to develop self-sense of responsibility towards the environment and to make defaulters realize their mistake by imposing compensation, which will be utilized for the protection/restoration of the environment.

Although, this is the first attempt in India towards development of methodology for assessing environmental compensation, however, efforts have been made to simplifying the process so that regulatory institutions can easily adopt the methodology for implementation.

Chapter-I: Environment Compensation to be levied on Industrial Units

1.1 Background

The Hon'ble National Green Tribunal (NGT), Principal Bench in the matter of OA No. 593/2017 (WP (CIVIL) No. 375/2012, Paryavaran Suraksha Samiti & Anr. Vs. Union of India & Ors. directed Central Pollution Control Board (CPCB) that:

> *"The CPCB may take penal action for failure, if any, against those accountable for setting up and maintaining STPs, CETPs and ETPs. CPCB may also assess and recover compensation for damage to the environment and said fund may be kept in a separate account and utilized in terms of an action plan for protection of the environment. Such action plan may be prepared by the CPCB within three months"* ***(Annexure-I).***

1.2 Constitution of the Committee

In this context, Chairman, CPCB constituted a Committee under the Chairmanship of Shri A. Sudhakar, I/c WQM-I with Shri A. K. Vidyarthi, I/c WQM-II, Shri P. K. Gupta, I/c IPC-VI, Shri Nazimuddin I/c IPC-II and Dr. S. K. Paliwal, Scientist 'D' as members. The Committee was asked to deliberate on this issue and come up with a draft formulation before 15.9.2018.

1.3 Methodology for Assessing Environmental Compensation

The Committee discussed the issue on 4.9.2018, 13.9.2018,17.9.2018 and 09.10.2018. A meeting was also held with Senior Officers of CPCB Head Office and Regional Directorates through video conferencing on 28.09.2018 to discuss the draft report and to seek comments/feedbacks. The comments/feedbacks received and deliberations of the Committee on the same are given in **Annexure-II.**

As per the Hon'ble NGT suggestion, CPCB has invited comments of 3 expert institution, namely, Centre for Science and Environment (CSE), Institute of Economic Growth (IEG) and The Energy Research Institute (TERI). A meeting to incorporate the comments of the expert institutions and to finalize the report, was held on 27/03/2019. The CPCB in-house committee on Environmental Compensation has deliberated on the comments and finalized the report accordingly. The Committee's deliberations are attached as **Annexure-III.**

It was deliberated for developing a formula for imposing environmental compensation on industrial units for violation of directions issued by regulatory bodies and this is the first attempt made. The committee discussed that environmental compensation should be based on "Polluter Pay Principle". The Committee decided to list the instances for taking cognizance of cases fit for violation and levy environmental compensation.

Cases considered for levying Environmental Compensation (EC):

a) Discharges in violation of consent conditions, mainly prescribed standards / consent limits.
b) Not complying with the directions issued, such as direction for closure due to non-installation of OCEMS, non-adherence to the action plans submitted etc.
c) Intentional avoidance of data submission or data manipulation by tampering the Online Continuous Emission / Effluent Monitoring systems.
d) Accidental discharges lasting for short durations resulting into damage to the environment.
e) Intentional discharges to the environment -- land, water and air resulting into acute injury or damage to the environment.
f) Injection of treated/partially treated/ untreated effluents to ground water.

1.3.1 In the instances as mentioned at *a, b and c* above, Pollution Index may be used as a basis to levy the Environmental Compensation. CPCB has published guidelines for categorization of industries into Red, Orange, Green and White based on concept of Pollution Index (PI). The Pollution Index is arrived after considering quantity & quality of emissions/ effluents generated, types of hazardous wastes generated and consumption of resources. Pollution Index of an industrial sector is a numerical number in the range of 0 to 100 and can be represented as follows:

PI = *f* (Water Pollution Score, Air Pollution Score & HW Generation Score)

Pollution Index is a number from 0 to 100 and increasing value of PI denotes the increasing degree of pollution *hazard from the industrial sector.*

CPCB has issued directions to all SPCBs/PCCs on 07.03.2016 to adopt the methodology and follow guidelines prepared by CPCB for categorization of industrial sectors into Red, Orange, Green and White.

The concept of Pollution Index, which was deliberated widely with all stakeholders and agreed, shall be used for calculating Environmental Compensation. This may help in implementation of such provision throughout the country, a successful initiative in vital field of industrial pollution control.

After considering various factors including the policy implementation issues, Committee has come up with following formula for levying the Environmental Compensation in instances as mentioned at a, b and c including non-compliance of the environmental standards / violation of directions.

The Environmental Compensation shall be based on the following formula:

$$EC = PI \times N \times R \times S \times LF$$

Where,

EC is Environmental Compensation in ₹
PI = Pollution Index of industrial sector
N = Number of days of violation took place
R = A factor in Rupees (₹) for EC
S = Factor for scale of operation
LF = Location factor

The formula incorporates the anticipated severity of environmental pollution in terms of Pollution Index, duration of violation in terms of number of days, scale of operation in terms of micro & small/medium/large industry and location in terms of proximity to the large habitations.

Note:

a. The industrial sectors have been categorized into Red, Orange and Green, based on their Pollution Index in the range of 60 to 100, 41 to 59 and 21 to 40, respectively. It was suggested that the average pollution index of 80, 50 and 30 may be taken for calculating the Environmental Compensation for Red, Orange and Green categories of industries, respectively.
b. N, number of days for which violation took place is the period between the day of violation observed/due date of direction's compliance and the day of compliance verified by CPCB/SPCB/PCC.
c. R is a factor in Rupees, which may be a minimum of 100 and maximum of 500. It is suggested to consider R as 250, as the Environmental Compensation in cases of violation.
d. S could be based on small/medium/large industry categorization, which may be 0.5 for micro or small, 1.0 for medium and 1.5 for large units.
e. LF, could be based on population of the city/town and location of the industrial unit. For the industrial unit located within municipal boundary or up to 10 km distance from the municipal boundary of the city/town, following factors (LF) may be used:

Table No. 1.1: Location Factor Values

S. No.	Population* (million)	Location Factor# (LF)
1	1 to <5	1.25
2	5 to <10	1.5
3	10 and above	2.0

**Population of the city/town as per the latest Census of India*
#LF will be 1.0 in case unit is located >10km from municipal boundary
LF is presumed as 1 for city/town having population less than one million.

For notified Ecologically Sensitive areas, for beginning, LF may be assumed as 2.0. However, for critically Polluted Areas, LF may be explored in future.

f. In any case, minimum Environmental Compensation shall be ₹ 5000/day.
g. In order to include deterrent effect for repeated violations, EC may be increased on exponential basis, i.e. by 2 times on 1st repetition, 4 times on 2nd repetition and 8 times on further repetitions.
h. If the operations of the industry are inevitable and violator continues its operations beyond 3 months then for deterrent compensation, EC may be increased by 2, 4 and 8 times for 2nd, 3rd and 4th quarter, respectively. Even if the operations are inevitable beyond 12 months, violator will not be allowed to operate.
i. Besides EC, industry may be prosecuted or closure directions may be issued, whenever required.

A sample calculation for Environmental Compensation (without deterrent factor) is given at Table No. 1.2. It can be noticed that for all instances, EC for Red, Orange and Green category of industries varies from 3,750 to 60,000 ₹/day.

Table No. 1.2: A sample calculation for Environmental Compensation

Industrial Category	Red	Orange	Green
Pollution Index (PI)	60-100	41-59	21-40
Average PI	80	50	30
R-Factor	250		
S-Factor	0.5-1.5		
L-Factor	1.00-2.00		
Environmental Compensation (₹/day)	**10,000-60,000**	**6,250-37,500**	**5,000-22,500**

1.3.2 In other instances i.e. *d, e and f*, the environmental compensation may contain two parts – one requires providing immediate relief and other long-term measures such as remediation. In all these cases, detailed investigations are required from expert institutions/organizations based on which environmental compensation will be decided. CPCB shall list the expert institutions for this purpose.

In such cases, comprehensive plan for remediation of environmental pollution may be prepared and executed under the supervision of a committee with representatives of SPCB, CPCB and expert institutions/organizations.

1.4 Action Plan for Utilization of Environmental Compensation Fund

The Committee discussed about the utilization of funds, which will be received by imposing Environmental Compensation. The following Action Plan is proposed to utilize the fund for protection of the environment.

1.4.1. When Environmental Compensation is calculated through the Pollution Index:

The amount received by imposing the Environmental Compensation to the industries / organization non-complying with the environmental standards / violating any CPCB's directions shall be deposited in a separate bank account. The amount accumulated will be utilized for Protection of Environment. The following schemes were identified, which may be considered for utilization of Environmental Compensation Fund:

a. Industrial Inspections for compliance verification
b. Installation of Continuous water quality monitoring stations / Continuous ambient air quality monitoring stations for strengthening of existing monitoring network
c. Preparation of Comprehensive Industry Documents on Industrial Sectors / clean technology
d. Investigations of environmental damages, preparation of DPRs
e. Remediation of contaminated sites
f. Infrastructure augmentation of Urban Local Bodies (ULBs) /capacity building of SPCBs/PCCs

The above proposed list may include other schemes also, depending upon the requirement.
Considering the availability of accumulated funds, CPCB will finalize the scheme, keeping in mind the priority, to utilize the funds of Environmental Compensation.

1.4.2. When Environmental Compensation is assessed based on actual damage to the environment by Expert Organization/ Agency:

The amount of Environmental Compensation under this case will be remediation costs, measures requiring immediate and short-term actions, compensation towards loss of ecology, etc., and will be utilized exclusively for the purpose at specific site, based on the detailed investigations by the Expert Organizations/ agencies.

1.5 Recommendations

The Committee made following recommendations:

1.5.1 To begin with, Environmental Compensation may be levied by CPCB only when CPCB has issued the directions under the Environment (Protection) Act, 1986. In case of a, b and c, Environmental Compensation may be calculated based on the formula "EC = PI x N x R x S x LF", wherein, PI may be taken as 80, 50 and 30 for red, orange and green category of industries, respectively, and R may be taken as 250. S and LF may be taken as prescribed in the preceding paragraphs.

1.5.2 In case of d, e and f, the Environmental Compensation may be levied based on the detailed investigations by Expert Institutions/Organizations.

1.5.3 The Hon'ble Supreme Court in its order dated 22.02.2017 in the matter of Paryavaran Suraksha Samiti and another v/s Union of India and others (Writ Petition (Civil) No. 375 of 2012), directed that all running industrial units which require "consent to operate" from concerned State Pollution Control Board, have a primary effluent treatment plant in place. Therefore, no industry requiring ETP, shall be allowed to operate without ETP.

1.5.4 EC is not a substitute for taking actions under EP Act, Water Act or Air Act. In fact, units found polluting should be closed/prosecuted as per the Acts and Rules.

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Chapter-II: Environmental Compensation to be levied on all violations of Graded Response Action Plan (GRAP) in NCR.

2.1 Background

The CPCB In-house Committee also discussed that the EC shall also be levied on all violations of Graded Response Action Plan (GRAP) in NCR. The implementing agencies for each activity have been identified and the EC will be levied on these agencies. These violations attract graded amounts of EC depending on the state of ambient air quality, which is given in table below:

Table No. 2.1: Environmental Compensation to be levied on all violations of Graded Response Action Plan (GRAP) in Delhi-NCR.

Activity	State Of Air Quality	Environmental Compensation ()
Industrial Emissions	Severe +/Emergency	Rs 1.0 Crore
	Severe	Rs 50 Lakh
	Very Poor	Rs 25 Lakh
	Moderate to Poor	Rs 10 Lakh
Vapour Recovery System (VRS) at Outlets of Oil Companies		
i. **Not installed**	Target Date	Rs 1.0 Crore
ii. **Non-functional**	Very poor to Severe +	Rs 50.0 Lakh
	Moderate to Poor	Rs 25.0 Lakh
Construction sites (Offending plot more than 20,000 Sq.m.)	Severe +/Emergency	Rs 1.0 Crore
	Severe	Rs 50 Lakh
	Very Poor	Rs 25 Lakh
	Moderate to Poor	Rs 10 Lakh
Solid waste/ garbage dumping in Industrial Estates	Very poor to Severe +	Rs 25.0 Lakh
	Moderate to Poor	Rs 10.0 Lakh
Failure to water sprinkling on unpaved roads		
a) **Hot-spots**	Very poor to Severe +	Rs 25.0 Lakh
b) **Other than Hot-spots**	Very poor to Severe +	Rs 10.0 Lakh

2.2 Action Plan for Utilization of Environmental Compensation Fund

EC levied on all violations of Graded Response Action Plan (GRAP) in Delhi NCR will be deposited in the same fund and will be utilized in the same manner as mentioned in para 1.4.1 of Chapter-I of this report.

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Chapter-III: Environmental Compensation to be levied in case of failure of preventing the pollutants being discharged in water bodies and failure to implement waste management rules

3.1 Background

The Hon'ble Supreme Court in its order dated 22.02.2017 in the matter of Paryavaran Suraksha Samiti and another v/s Union of India and others (Writ Petition (Civil) No. 375 of 2012), directed State Governments (including the concerned Union Territories) to set-up Sewage Treatment Plants (STPs), which are already under implementation, within the time lines already postulated. Further, the STPs, which are yet to set-up, to be completed within a period of three years, from today, i.e. by 22.02.2020.

The Hon'ble NGT in its order dated 06.12.2018 **(Annexure-III)** in the matter of Court of its own motion v/s State of Karnataka (Original Application No. 125/2017 and M.A. No. 1337/2018) has given following directions:

> *"Since failure of preventing the pollutants being discharged in water bodies (including lakes) and failure to implement solid and other waste management rules are too frequent and widespread, the CPCB must lay down specific guidelines to deal with the same, throughout India, including the scale of compensation to be recovered from different individuals/authorities, in addition to or as alternative to prosecution. The scale may have slabs, depending on extent of pollution caused, economic viability, etc. Deterrent effect for repeated wrongs may also be provided."*

3.2 Ideology of Environmental Compensation Formula

In compliance of the directions of the Hon'ble Tribunal, the Committee deliberated on the issue of environmental compensation to be recovered from individuals/authorities in case of failure of preventing the pollutants being discharged in water bodies and failure to implement solid and other waste management rules. The Committee has suggested that environmental compensation in these cases should be comprised of two components i.e.

1. Cost saved/benefits achieved by the concerned individual/authority by not having proper waste/sewage management system; and
2. Cost to the environment (environmental externality) due to untreated/partially treated waste/sewage because of insufficient capacity of waste/sewage management/treatment facility.

Cost saved/benefits achieved by not having proper waste/sewage management system includes the interest on capital cost of the waste/sewage management facility and daily operation and maintenance (O&M) cost associated with the facility.

The Committee suggested that annual interest rate as 10% on loan amount, borrowed by concerned individual/authority for setting-up waste/sewage management facility, may be assumed as Capital Cost Factor for calculation of environment compensation. Further, as whole O&M cost is saved by concerned individual/authority for not managing required waste/sewage management system, 100% of the O&M cost saved may be considered as O&M cost factor.

Therefore, generalized formula for Environmental Compensation may be described as:

EC= Capital Cost Factor x Marginal Average Capital Cost for Establishment of Waste or Sewage Management or Treatment Facility x (Waste or Sewage Management or Treatment Capacity Gap) + O&M Cost Factor x Marginal Average O&M Cost x (Waste or Sewage Management or Treatment Capacity Gap) x No. of Days for which facility was not available + Environmental Externality

Cost to the environment due to untreated/partially treated waste/sewage discharge by concerned individual/authority may be assumed as recommended by the committee, which is mentioned below:

Table No. 3.1: Environmental externality for untreated/partially treated sewage discharge

Sewage Treatment Capacity Gap (MLD)	Marginal Cost of Environmental Externality (Rs. per MLD/day)	Minimum and Maximum value of Environmental Externality recommended by the Committee (Lacs Rs. Per Day)
Up to 200	75	Min. 0.05, Max. 0.10
201-500	85	Min. 0.25, Max. 0.35
501 and above	90	Min. 0.60, Max. 0.80

Table No. 3.2: Environmental externality for improper municipal solid waste management

Municipal Solid Waste Management Capacity Gap (TPD)	Marginal Cost of Environmental Externality (Rs. per ton per day)	Minimum and Maximum value of Environmental Externality recommended by the Committee (Lacs Rs. Per Day)
Up to 200	15	Min. 0.01, Max. 0.05
201-500	30	Min. 0.10, Max. 0.15
501-1000	35	Min. 0.25, Max. 0.35
1001-2000	40	Min. 0.50, Max. 0.60
Above 2000	Max. 0.80	

The Committee further decided to fix a cap for minimum and maximum cost for capital and O&M component for Environmental Compensation, which are given in below tables:

Table No. 3.3: Minimum and Maximum EC to be levied for untreated/partially treated sewage discharge

Class of the City/Town	Mega-City	Million-plus City	Class-I City/Town and others
Minimum and Maximum values of EC (Total Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 2000 Max. 20000	Min. 1000 Max. 10000	Min. 100 Max. 1000
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./day)	Min. 2 Max. 20	Min. 1 Max. 10	Min. 0.5 Max. 5

Table No. 3.4: Minimum and Maximum EC to be levied for improper municipal solid waste management

Class of the City/Town	Mega-City	Million-plus City	Class-I City/Town and others
Minimum and Maximum values of EC (Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 1000 Max. 10000	Min. 500 Max. 5000	Min. 100 Max. 1000
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./day)	Min. 1.0 Max. 10.0	Min. 0.5 Max. 5.0	Min. 0.1 Max. 1.0

The application of formula for calculation of EC may be further understood with the example of two typical cases.

3.3 Environment Compensation for Discharge of Untreated/Partially Treated Sewage by Concerned Individual/Authority:

BIS IS-1172:1993 suggests that for communities with population above 100,000, minimum of 150 to 200 lpcd of water demand is to be supplied. Further, 85% of return rate (CPHEEO Manual on Sewerage and Sewage Treatment Systems, 2013), may be considered for calculation of total sewage generation in a city. CPCB Report on "Performance evaluation of sewage treatment plants under NRCD, 2013", describes that the capital cost for 1 MLD STP ranges from 0.63 Cr. to 3 Cr. and O&M cost is around Rs. 30,000 per month. After detail deliberations, the Committee suggested to assume capital cost for STPs as Rs. 1.75 Cr/MLD (marginal average cost). Further, expected cost for conveyance system is assumed as Rs. 5.55 Cr./MLD (marginal average cost) and annual O&M cost as 10% of the combined capital cost. Population of the city may be taken as per the latest Census of India. Based on these assumptions, Environmental Compensation to be levied on concerned ULB may be calculated with the following formula:

EC= Capital Cost Factor x [Marginal Average Capital Cost for Treatment Facility x (Total **Generation-Installed Capacity) + Marginal Average** ***Capital Cost for Conveyance Facility*** **x** ***(Total Generation -Operational Capacity)] + O&M Cost Factor x Marginal Average O&M Cost x (Total Generation- Operational Capacity) x No. of Days for which facility was not available + Environmental Externality x No. of Days for which facility was not available***

Alternatively;

EC (Lacs Rs.) = [17.5(Total Sewage Generation – Installed Treatment Capacity) + 55.5(Total Sewage Generation-Operational Capacity)] + 0.2(Sewage Generation-Operational Capacity) x N + Marginal Cost of Environmental Externality x (Total Sewage Generation-Operational Capacity) x N

Where; N= Number of days from the date of direction of CPCB/SPCB/PCC till the required capacity systems are provided by the concerned authority

Quantity of Sewage is in MLD

Table No. 3.5: Sample calculation for EC to be levied for discharge of untreated/partial treated Sewage

City	Delhi	Agra	Gurugram	Ambala
Population (2011)	1,63,49,831	17,60,285	8,76,969	5,00,774
Class	Mega-City	Million-plus City	Class-I Town	Class-I Town
Sewage Generation (MLD) (*as per the latest data available with CPCB)*	4195	381	486	37
Installed Treatment Capacity (MLD) (as per the latest data available with CPCB)	2500	220	404	45.5
Operational Capacity (MLD) (as per the latest data available with CPCB)	1900	140	300	24.5
Treatment Capacity Gap (MLD)	2295	241	186	12.5
Calculated EC (capital cost component for STPs) in Lacs Rs.	29662.50	2817.50	1435.00	0.00
Calculated EC (capital cost component for Conveyance System) in Lacs. Rs.	127372.50	13375.50	10323.00	693.75
Calculated EC (Total capital cost component) in Lacs Rs.	157035.00	16193.00	11758.00	693.75
Minimum and Maximum values of EC (Total Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 2000 Max. 20000	Min. 1000 Max. 10000	Min. 100 Max. 1000	Min. 100 Max. 1000
Final EC (Total Capital Cost Component) in Lacs Rs.	**20000.00**	**10000.00**	**1000.00**	**693.75**
Calculated EC (O&M Component in Lacs Rs./day	459.00	48.20	37.20	2.50
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./day)	Min. 2 Max. 20	Min. 1 Max. 10	Min. 0.5 Max. 5	Min. 0.5 Max. 5
Final EC (O&M Component) in Lacs. Rs./Day	**20.00**	**10.00**	**5.00**	**2.50**
Calculated Environmental Externality (Lacs Rs .Per Day)	2.0655	0.2049	0.1395	0.0094
Minimum and Maximum value of Environmental Externality recommended by the Committee (Lacs Rs. Per Day)	Min. 0.60 Max. 0.80	Min. 0.25 Max. 0.35	Min. 0.05 Max. 0.10	Min. 0.05 Max. 0.10
Final Environmental Externality (Lacs Rs. Per day)	**0.80**	**0.25**	**0.10**	**0.05**

3.4 Environment Compensation to be Levied on Concerned Individual/Authority for Improper Solid Waste Management:

It is known that estimated MSW generation is approximately 1.5 lakh MT/Day in India (MoHUA Report-2016). As per the principles of SWM Rules, 2016 and PWM Rules 2016, as amended in 2018, the total cost of Municipal Solid Waste management in a city/town includes cost for door to door collection, cost of segregation at source, cost for transportation in segregated manner, cost for processing of MSW and disposal through facility like composting, biomethanation, recycling, co-processing in cement kilns etc.

In view of above, it is estimated that the total cost of processing and treatment of MSW for a city having population size of 1 lakh and generating approximately 50 tons/day of MSW is Rs.15.5 Crores, including capital cost (one time) and O & M cost for one year. The expenditure for subsequent years would be only Rs. 3.5 crores/annum.

CPCB sponsored a survey to ascertain the status of municipal solid waste disposal in 59 cities/towns of India. The survey was conducted by the Environment Protection Training Research Institute (EPTRI), Hyderabad. As per the survey, it is estimated that solid waste generated in small, medium and large cities and towns is about 0.1 kg (Class-III), 0.3-0.4 kg (Class-II) and 0.5 kg (Class-I) per capita per day respectively. The committee opined that 0.6 kg/day, 0.5 kg/day and 0.4 kg/day per capita waste generation may be assumed for mega-cities, million-plus UAs/towns and Class-I UA/Towns respectively for calculation of environmental compensation purposes. Based on these assumptions, Environmental Compensation to be levied on concerned ULB may be calculated with the following formula:

EC = Capital Cost Factor x Marginal Average Cost for Waste Management x (Per day waste generation-Per day waste disposed as per the Rules) + O&M Cost Factor x Marginal Average O&M Cost x (Per day waste generation-Per day waste disposed as per the Rules) x Number of days violation took place + Environmental Externality x N

Where;

Waste Quantity in tons per day (TPD)

N= Number of days from the date of direction of CPCB/SPCB/PCC till the required capacity systems are provided by the concerned authority

Simplifying;

EC (Lacs Rs.) = 2.4(Waste Generation - Waste Disposed as per the Rules) +0.02 (Waste Generation - Waste Disposed as per the Rules) x N + Marginal Cost of Environmental Externality x (Waste Generation - Waste Disposed as per the Rules) x N

Table No. 3.6: Sample calculation for EC to be levied for improper management of Municipal Solid Waste

City	Delhi	Agra	Gurugram	Ambala
Population (2011)	1,63,49,831	17,60,285	8,76,969	5,00,774
Class	Mega-City	Million-plus City	Class-I Town	Class-I Town
Waste Generation (kg. per person per day)	0.6	0.5	0.4	0.4
Waste Generation (TPD)	9809.90	880.14	350.79	200.31
Waste Disposal as per Rules (TPD) (*assumed as 25% of waste generation for sample calculation)*	2452.47	220.04	87.70	50.08
Waste Management Capacity Gap (TPD)	7357.42	660.11	263.09	150.23
Calculated EC (capital cost component) in Lacs. Rs.	17657.82	1584.26	631.42	360.56
Minimum and Maximum values of EC (Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 1000 Max. 10000	Min. 500 Max. 5000	Min. 100 Max. 1000	Min. 100 Max. 1000
Final EC (capital cost component) in Lacs. Rs.	**10000.00**	**1584.26**	**631.42**	**360.56**
Calculated EC (O&M Component) in Lacs. Rs./Day	147.15	13.20	5.26	3.00
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./Day)	Min. 1.0 Max. 10.0	Min. 0.5 Max. 5.0	Min. 0.1 Max. 1.0	Min. 0.1 Max. 1.0
Final EC (O&M Component) in Lacs. Rs./Day	**10.00**	**5.00**	**1.00**	**1.00**
Calculated Environmental Externality (Lacs Rs. Per Day)	2.58	0.18	0.03	0.02
Minimum and Maximum value of Environmental Externality recommended by the Committee (Lacs Rs. per day)	Max. 0.80	Min. 0.25 Max. 0.35	Min. 0.01 Max. 0.05	Min. 0.01 Max. 0.05
Final Environmental Externality (Lacs Rs. per day)	**0.80**	**0.25**	**0.03**	**0.02**

3.3 Action Plan for Utilization of Environmental Compensation Fund

EC levied in case of failure of preventing the pollutants being discharged in water bodies and failure to implement waste management rules will be deposited in the same fund and will be utilized in the same manner as mentioned in para 1.4.1 of Chapter-I of this report.

3.4 Recommendations

1. The Committee recommended that to begin with, Environmental Compensation to be recovered from individuals/authorities in case of failure of preventing the pollutants being discharged in water bodies and failure to implement solid waste management rules may be calculated with the methodology described in the report.
2. If mixing of Bio-medical Waste or Hazardous Waste is found in Municipal Solid Waste than capital cost component of EC may be increased by a multiplication factor of 1.5.

3. In order to include deterrent effect for continuous violations, component of O&M and Environmental Externality in EC formula may be increased on exponential basis by 2, 4, and 8 times after every six-months, beyond the time prescribed by authority for ensuring complete treatment of sewage/waste of the city/town.

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Chapter-IV: Environmental Compensation in Case of Illegal Extraction of Ground Water

4.1 Background

The Hon'ble National Green Tribunal (NGT), Principal Bench in the matter of Shailesh Singh v/s Central Ground Water Board & Ors. (Original Application No. 327/2018) vide order dated 03/01/2019 **(Annexure-V)** directed Central Pollution Control Board (CPCB) that:

> *"CPCB may constitute a mechanism to deal with individual cases of violation of norms, as existed prior to Notification of 12/12/2018, to determine the environment compensation to be recovered or other coercive measures to be taken, including prosecution, for past illegal extraction of ground water, as per law."*

4.2 Constitution of the Committee

In compliance to Hon'ble NGT dated 03/01/2019, CPCB constituted a committee under the Chairmanship of Shri A. Sudhakar, DH, WQM-I Division with Shri P. K. Gupta, DH, IPC-VI, Shri Vishal Gandhi, Sc. D, UPC-I Division and Smt. Sunlti Parashar, Scientist B, WQM-I Division as members. The committee was asked to deliberate on this issue and come up with draft formulation of mechanism to determine the Environmental Compensation for illegal extraction of ground water.

4.3 Methodology for Assessing Environmental Compensation

The committee discussed the issue on 07/02/2019, 07/03/2019 and 20/3/2019. The committee deliberated on the issue of Environmental Compensation to be recovered from individuals/industries such as domestic, packaging drinking water units, mining & infrastructure projects and industrial units in case of illegal extraction of ground water. The Guidelines/Criteria for evaluation of proposals/requests for Ground Water Abstraction, 2015 were also discussed and based on this further formulation to levy Environmental Compensation has been evolved.

4.4 Ideology of Environmental Compensation w.r.to illegal extraction of ground water

Ground water is becoming an increasingly scarce resource because of its unabated and indiscriminate over-exploitation. Growth in ground water exploitation, however, has led to a steep fall in water table in several parts of the country. Use of ground water is becoming unsustainable day by day. The falling water table is a matter of special concern since it tends to reduce the accessibility of the resource to small and marginal farmers due to increase in costs of extractions.

Specific conditions applicable in Notified/Non-Notified areas for various users, as mentioned in Guidelines/Criteria for evaluation of proposals/requests for Ground Water Abstraction, 2015 are given below:

For Notified Areas:

1. Permission to abstract ground water through any energized means will not be accorded for any purpose other than drinking water.

2. Central Ground Water Authority (CGWA) so far has notified 162 areas, in the country for the purpose of regulation of ground water development.
3. Regulation of Ground Water development in Notified areas is through District Administrative Heads assisted by Advisory Committees under the provisions of Section 4 of the Environment (Protection) Act, 1986.
4. In Notified areas, ground water use in individual houses, infrastructure complexes like group housing societies, hospitals, schools etc. and drinking water requirements of workers in industries can be allowed.
5. NOC for ground water withdrawal will be considered only if Water Supplying Department is not providing adequate water in the area/premises. Proof for this is to be produced from the concerned authority by the applicant.
6. For individual houses, the maximum diameter of the tube-well should be restricted to 4 inch only and the capacity of the pump should not exceed 1HP. For infrastructure projects, maximum diameter of the ground water abstraction structures should be restricted to 150 mm (6 inches) only and capacity of the pump should not exceed 5 HP.
7. Any violation of the above conditions will attract legal action under Section 15 of the Environment (Protection) Act, 1986.

For Non-Notified Areas:

NOC for ground water withdrawal will be considered for industries/infrastructure/packaging as per safe, semi critical, critical and over-exploited criteria.

4.5 Formula for Environmental Compensation for illegal extraction of ground water

The committee decided that the formula should be based on water consumption (Pump Yield & Time duration) and rates for imposing Environmental Compensation for violation of illegal abstraction of ground water. The committee has proposed following formula for calculation of Environmental Compensation (EC_{GW}):

EC_{GW}	=	**Water Consumption per Day x No. of Days x Environmental Compensation Rate for illegal extraction of ground water (ECR_{GW})**

Where water Consumption is in m^3/day and ECR_{GW} in Rs./m^3

Yield of the pump varies based on the capacity/power of pump, water head etc. For reference purpose, yield of the pump may be assumed as given in **Annexure-VI.**

Time duration will be the period from which pump is operated illegally.

In case of illegal extraction of ground water, quantity of discharge as per the meter reading or as calculated with assumptions of yield and time may be used for calculation of EC_{GW}.

4.6 Environmental Compensation Rate (ECR_{GW}) for illegal use of Ground Water

The committee decided that the Environmental Compensation Rate (ECR_{GW}) for illegal extraction of ground water should increase with increase in water consumption as well as water scarcity in the area. Further, ECR_{GW} are kept relaxed for drinking and domestic use as compared to other uses, considering the basic need of human being.

As per CGWB, safe, semi-critical, critical and over-exploited areas are categorized from the ground water resources point of view (CGWB, 2017). List of safe, semi-critical, critical and over-exploited areas are available on the website of CGWB and can be accessed from- http://cgwa-noc.gov.in/LandingPage/NotifiedAreas/CategorizationOfAssessmentUnits.pdf#ZOOM=150.

Environmental Compensation Rates (ECR_{GW}) for illegal use of ground water (ECR_{GW}) for various purposes such as drinking/domestic use, packaging units, mining and industrial sectors as finalized by the committee are given in tables below:

4.6.1 ECR_{GW} for Drinking and Domestic use:

Drinking and Domestic use means uses of ground water in households, institutional activity, hospitals, commercial complexes, townships etc.

Sl. No.	Area Category	Water Consumption (m^3/day)			
		<2	2 to <5	5 to <25	25 & above
		Environmental Compensation Rate (ECR_{GW}) in Rs./m^3			
1	Safe	4	6	8	10
2	Semi Critical	12	14	16	20
3	Critical	22	24	26	30
4	Over-Exploited	32	34	36	40
Minimum EC_{GW}=Rs 10,000/- (for households) and Rs. 50,000 (for institutional activity, commercial complexes, townships etc.)					

4.6.2 ECR_{GW} for Packaged drinking water units:

Sl. No.	Area Category	Water Consumption (m^3/day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR_{GW}) in Rs./m^3			
1	Safe	12	18	24	30
2	Semi critical	24	36	48	60
3	Critical	36	48	66	90
4	Over-exploited	48	72	96	120
Minimum EC_{GW}=Rs 1,00,000/-					

4.6.3 ECR_{GW} for Mining, Infrastructure and Dewatering Projects

Sl. No.	Area Category	Water Consumption (m^3/day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR_{GW}) in Rs./m^3			
1	Safe	15	21	30	40
2	Semi critical	30	45	60	75
3	Critical	45	60	85	115
4	Over-exploited	60	90	120	150
Minimum EC_{GW}=Rs 1,00,000/-					

4.6.4 ECR_{GW} for Industrial Units:

Sl. No.	Area Category	Water Consumption (m^3/day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR_{GW}) in Rs./m^3			
1	Safe	20	30	40	50
2	Semi critical	40	60	80	100
3	Critical	60	80	110	150
4	Over-exploited	80	120	160	200
Minimum EC_{GW}=Rs 1,00,000/-					

For better understanding of implementation of EC_{GW} policy, some example calculations are given below:

Example No. 1 (For drinking and domestic Use):

It is observed that a household in safe zone is extracting ground water illegally from past 2 year and 3 months with the help of 1 HP pump, dia 4 inches and head as 25 meter. It is assumed that the house-owner runs the pump for 0.5 hr/day. What Environmental Compensation (EC_{GW}) will be charged to the owner?

Solution: Pump Yield *(Please refer Annexure-VI)* = 3 m^3/hr

Daily Consumption = 3 x 0.5 =1.5 m^3

ECR_{GW} = 4 Rs./m^3 *(Please refer para 4.6.1)*

EC to be levied = 4 x 1.5 = 6 Rs./day

Total time period = 820 days

Then, EC_{GW}= 6 x 820

Calculated EC_{GW}= 4,920 Rs.

EC_{GW} to be levied = 10,000 Rs. (minimum prescribed EC_{GW}, *please refer para 4.6.1*)

Example 2 (For Industrial Units):

It is observed that an industry in critical zone is extracting ground water illegally from past 1 year with the help of 5 HP pump, dia 6 inches and head as 50 meter. It is assumed that the industry runs the pump for 3 hrs/day. What Environmental Compensation (EC_{GW}) will be charged to the owner?

Solution: Pump Yield *(Please refer Annexure-VI)* = 12 m^3/hr

Daily Consumption = 12 x 3 =36 m^3/day

ECR_{GW} = 60 Rs./m^3 *(Please refer para 4.6.4)*

EC to be levied = 60 x 36 = 2,160 Rs./day

Total time period = 365 days

Then, EC_{GW}= 2,160 x 365

EC_{GW}= 7,88,400 Rs.

4.7 Relaxation

Central Ground Water Authority (CGWA) reserves to right to relax or interpret these mechanisms in case of any exigency or situation of National strategic importance, as per Guidelines/Criteria for evaluation of proposals/requests for Ground Water Abstraction, 2015.

4.8 Recommendations

The committee has given following recommendations:

- The minimum Environmental Compensation for illegal extraction of ground water for domestic purpose will be Rs. 10,000, for institutional/commercial use will be 50,000 and for other uses will be 1,00,000.
- In case of fixation of liability, it always lies with current owner of the premises where illegal extraction is taking place.
- Time duration may be assumed to be one year in case where no evidence for period of installation of bore well could be established.
- For Drinking and Domestic use, where metering is not present but storage tank facility is available, minimum water consumption per day may be assumed as similar to the storage capacity of the tank.
- For industrial ground water use, where metering is not available, water consumption may be assumed as per the consent conditions. Further, where in case industry is operating without consent, water consumption may be calculated based on the plant capacity (on the recommendation of SPCB/PCC, if required). SPCB/PCC may bring the issue of illegal extraction of ground water in industries in to the notice of CGWA for appropriate action by CGWA.
- Authorities assigned for levy EC and taking penal action are listed below:

S. No.	Actions	Authority
1.	To seal the illegal bore-well/tube-well to stop extraction of water and further closure of project	District Collector
2.	To levy EC_{GW} as per prescribed method	District Collector, CGWA
3.	To levy EC on water pollution, as per the method prescribed in report of CPCB- "EC on industrial pollution"	CPCB/SPCB/PCC
4.	Prosecution of violator	CGWA under EP Act
		SPCB/PCC under Air and Water Act

- CGWA may maintain a separate account for collection and utilization of fund, collected through the prescribed methodology in this report.

****

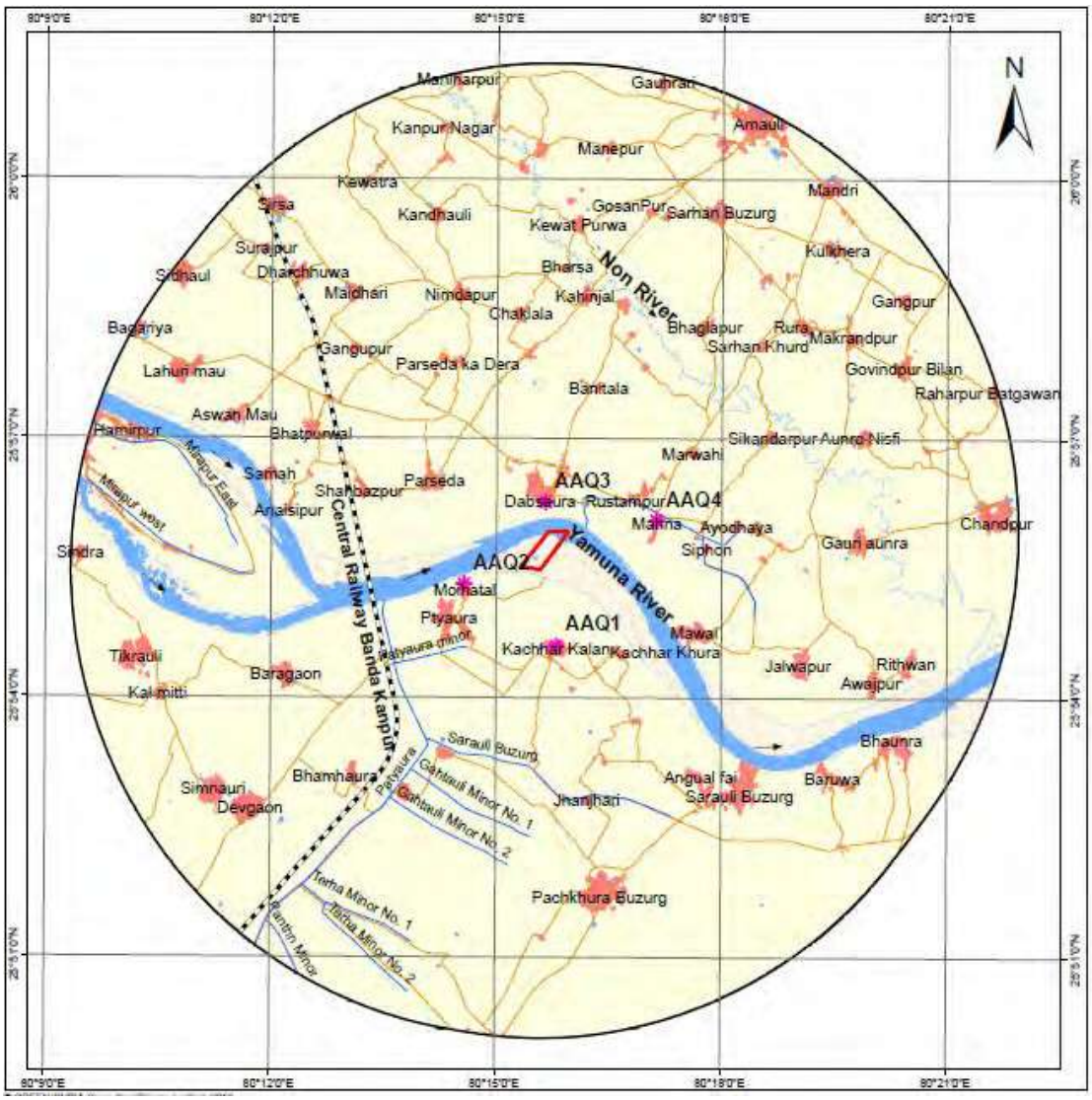
"True Copy"

ANNEXURE A-14

LEASE AREA- 90.03 ACRE/ 36.437 ha
PROPOSED PRODUCTION- 7,28,640 m^3/YEAR
VILLAGE- PATYORA, KHAND No: 31/4
TEHSIL- HAMIRPUR, DISTRICT- HAMIRPUR,
STATE- UTTAR PRADESH

ENVIRONMENT IMPACT ASSESMENT REPORT

PATYORA (AREA: 36.437ha) SAND/MORRUM MINE ON YAMUNA RIVER



PROJECT PROPONENT

SRI SAILENDRA YADAV

ENVIRONMENT CONSULTANT

GREENCINDIA CONSULTING PRIVATE LIMITED NCR, GHAZIABAD, UTTAR PRADESH
ACCREDITATION NUMBER: NABET/EIA/1619/RA 0058

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CHAPTER-1

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Sand mining is the removal of sand from their natural configuration. Sand is used for all kinds of projects like land reclamations, the construction of artificial islands and coastline stabilization. These projects have social and economical benefits. Sand and gravel are mined world-wide and account for the largest volume of solid material extracted globally. Globally, between 47 and 59 billion tonnes of material is mined every year (*Steinberger et al., 2010*), of which sand and gravel, hereafter known as aggregates, account for both the largest share (from 68% to 85%) and the fastest extraction increase (*Krausmann et al., 2009*). River and marine aggregates remain the main sources for building and land reclamation. For concrete, in-stream gravel requires less processing and produces high-quality material.

The project involves extraction of sand from Hamirpur District, Uttar Pradesh over Khand no. 31/4 of Patyora village in Hamirpur Tehsil. Letter of Intent has been granted to Sri Sailendra Yadav for sand/morrum mining from the Govt. of Uttar Pradesh vide letter no. 421/khanij/-M.M.C.–tees-vividh (2017-18), dated 07.06.2018 over an area of 90.0acres / 36.437ha on Yamuna River. The validity period of the lease is 5 years. The location of site and the geographical coordinates of the site superimposed on topo-sheet are provided in Figures 1.1 and 1.2 respectively as well as project site on satellite image has been shown in Figure 1.3. Mining will be carried out up to a maximum depth of 2.60m in river bed. Mining will be carried out only during day time and not in monsoon. A brief description of the project is given in Table 1.1.

Table 1-1: Project Brief

Particulars	Details		
Sanctioned Mining Lease area coordinate of 36.437 ha	Project Co-ordinates		
	Points	Latitude	Longitude
	A	25°55'21.03"N	80°16'04.85"E
	B	25°55'43.32"N	80°16'22.63"E
	C	25°55'31.32"N	80°16'34.75"E
	D	25°55'14.06"N	80°16'19.84"E
Workable area Coordinate of 29.637 ha	Point	Latitude	Longitude
	A	25°55'21.03"N	80°16'04.85"E
	B	25°55'43.32"N	80°16'22.63"E
	E	25°55'39.41"N	80°16'19.62"E
	F	25°55'28.79"N	80°16'32.80"E
Toposheet No.	63C/5		
Total area	90.0 acres / 36.437 ha		
Geological reserve	12,55,800 m^3		
Mineable Reserves	7,48,010m^3		
Targeted production	7,28,640 $m^{3/}$/year		
Manpower	180		
Elevation	94.0 mRL to 98.0mRL		

Particulars	Details
Land-use	River bed
Nearest habitation/town	Parsetha village (0.5 km, N)
Nearest airport	Chaudhary Charan Singh International Airport, Lucknow (110 km, NE)
Nearest railway station	Sumerpur Railway Station (15 km, SW)
Nearest highway	NH-86 (12km, W)
Power supply	Electricity connection is not required for the project. Mining will be carried out in day time only. Diesel required for machinery will be sourced from nearby villages.
Nearest Hospital	District Hospital, Hamirpur (11.7 km, WNW)
Educational Facility in the area	Primary school, Patyora (2.4 km, SSW) Government PG College, Hamirpur (11 km, W)
Water demand & supply	Water will be taken from hired tankers. The water requirement for mining & allied activities, drinking and plantation has been estimated to be 17.40KLD (Dust suppression- 7.20 KLD, Drinking- 1.80 KLD and Green Belt- 8.40KLD).
Nearest tourist places	None in the Study Area
Defense installations	None in the Study Area
Archeological features	None in the Study Area
Nearest Forest area	Manjhupur Block RF, 14.4 km, WNW
Nearest stream/river/water body	Baredi Nala, 2.4 km, SSE
Seismic zone	Zone II

Source: Pre-Feasibility Report, Sri Sailendra Yadav, Nainital

Mining will be carried out by semi-mechanized method of open cast mining with formation of benches. Proposed height & width of benches shall be kept 1.0m &10.0m respectively over all pit slopes shall be maintained. No overburden is present over the sand/ morrum deposit and no waste will be generated as the entire materials are saleable. A barrier of 7.5 m will be left all along the boundary. The mined minerals will be loaded in trucks. The trucks and equipments will be on hire basis or in-house depending upon requirement. The movement of trucks after mineral loading will be through approach roads.

The entire mineral produced will be used in construction of roads, buildings and other infrastructures. The entire mineral will be sold to buyers thereby bridging the gap between demand and supply of these minor minerals in the region. This will also generate much needed employment to the local people. Economy of the area will get a boost and there will be an overall growth of the region in terms of standard of living, education, health and transport.

1.2 PROJECT PROPONENT

Sri Sailendra Yadav, was the highest bidder in the e-bidding process conducted by government of Uttar Pradesh. The applicant is involved in the construction business for last many years. The applicant will invest necessary funds for the scientific and systematic development of mines including land rejuvenation and progressive reclamation programme and other measures necessary to protect the quality of the environment and human health etc.

The address of the proponent is provided below:

Name of the applicant	Sri Sailendra Yadav
Address of the Applicant	Koushal Colony, Malli Bmouri Post: Dambandunga Tehsil: Haldani, Dist. Nainital.
Period of Lease (Yrs)	5 years

1.3 SAND MINING IN INDIA

20% of the Earth's surface is occupied by sand in various forms. On an average, one person uses 200 kg of sand per year, states a report by the Centre for Techno-Economic Mineral Policy Options (C-Tempo), a society registered under the mines ministry.

India has the world's third largest construction business after China and the United States. Malls, houses, offices and flyovers have sprung all over. The 12th Five Year Plan projects an investment of 10 % of the national GDP or Rs 45 trillion in infrastructure. The massive scale of sand mining that India has seen in the past few years is a direct consequence of the growth in infrastructure. In 2009 and 2010, India ranked 12th in sand and gravel production.

The realty sector was unable to build houses planned in the 10th Five Year Plan. When the 11th Five Year Plan began in 2007, there was a backlog of 24.7 million houses. By the 12th Five Year Plan, the backlog increased to 42 million units. The Union Ministry of Urban Development projected a sand shortage of 91,666.7 million tonnes by 2011-end. Under the 12th Five Year Plan, road infrastructure needs about 150 million tonnes of sand and the power infrastructure about 90 million tonnes of sand.

1.4 NEED OF THE PROJECT

Boulder, gravel, morrum and sand is made of quartz or quartzite or its microcrystalline variety i.e. chalcedony which is resistant to weathering. This quality makes these minerals suitable for construction purposes.

The proposed project has planned a targeted production of 7,28,640 m^3 per year up to the contract period of 5 years. This production will cater the needs of construction material mainly in Uttar Pradesh and Madhya Pradesh thereby bridging the gap between demand and supply of these minor minerals in the region. Construction activities and industries require this mineral at consistent rates.

1.5 THE STUDY

1.5.1 PURPOSE OF THE REPORT

As per the notification of the MoEF&CC of September 2006, as amended in December 2009, mining projects spread over an area less than 100 ha are categorized under Category B in the Schedule, including expansion and modernization of existing projects or activities. All these projects require prior environmental clearance from State Environment Impact Assessment Authority (SEIAA), on the recommendations of State Expert Appraisal Committee (SEAC) before the commencement of mining activities. In line with the said notification, a presentation was made to the State Expert Appraisal Committee, U.P. in the meeting held on

18th July 2018 for determining the ToR for the preparation of EIA/EMP report. State Environment Impact Assessment Authority (SEIAA), Uttar Pradesh, issued TOR, vide letter no. 380/Parya/SEAC/4412/2018 to Sri Sailendra Yadav, on 22th October, 2018 (Refer Annex 1.1).

Based on the ToR conditions stipulated by SEIAA, a draft EIA was prepared and public hearing conducted on 28th November 2019. The present EIA/EMP report is the final EIA/EMP prepared based on the draft EIA and Public Hearing proceedings and has been prepared for assessing the environmental impacts on the study area (10km from boundary of the project site) due to the proposed mining activities.

1.5.2 SCOPE OF THE STUDY

Sri Sailendra Yadav has appointed Greencindia Consulting Private Limited to receive TOR and prepare the Environment Impact Assessment report for the proposed project to facilitate environment clearance for the same from State Environment Impact Assessment Authority (SEIAA), Uttar Pradesh. The report has been prepared for various environmental components such as air, noise, water, land, social and biological components along with parameters of human interest which may be affected and to prepare an EMP for mitigating adverse impacts. The steps involved in conducting the EIA Study are as follows:

- Conduct literature review, collate and compile secondary data including socio-economic data from published literature / government publications.
- Collection of baseline environment data in terms of various parameters within a study area of 10 km radius.
- Establishing relevant features of the project that are likely to have an impact on the environment.
- Assessing the environmental impacts because of development of the project.
- Identification of appropriate mitigation measures necessary to limit the adverse environmental impacts to within acceptable limits.
- Prepare an environmental management and monitoring plan outlining the measures for improving the environmental quality for environmentally sustainable development.

The baseline monitoring study has been carried out for Summer season (March to May) of 2018 for various environmental components so as to assess the anticipated impacts of the proposed project on the environment and suggest suitable mitigation measures for likely adverse impacts (Refer Table 1.2).

Table 1-2: Environmental Attributes & Frequency of Monitoring

Sl. No.	Attributes	Parameters	Source and Frequency
1	Land use	Present land-use categories to assess receiving environment within study area	Based on Survey of India toposheet and latest satellite imagery
2	Soil Characteristics	Physical and chemical parameters	Grab sample once at 3 locations once during monitoring period
3	Meteorology	Wind speed and direction, temperature, relative humidity and rainfall	Near project site continuous for one season with hourly recording and from secondary sources of Kanpur IMD station.
4	Ambient Air Quality	Particulate Matters (PM_{10}, $PM_{2.5}$), SO_2, NO_2 and CO	24 hourly samples twice a week for one season at 4 locations.

Sl. No.	Attributes	Parameters	Source and Frequency
5	Noise levels	Noise levels in dB(A)	At 4 locations data monitored for 24 hours during study season.
6	Hydrology	Drainage area and pattern, nature of streams, aquifer characteristics, recharge and discharge areas.	Based on data collected from secondary sources as well as hydrology.
7	Water quality	Physical, chemical and bacteriological parameters	Grab samples were collected at 3 ground water and 2 surface water locations once.
8	Traffic Density	Density and type of traffic	4 locations for 24 hours once.
9	Ecology	Existing terrestrial and aquatic flora and fauna within 10-Km radius circle.	Primary Survey was conducted for flora and fauna
10	Socio-Economic aspects	Socio-economic and demographic characteristics, worker characteristics	Based on secondary sources data like primary census abstracts of Census of India 2001 and 2011.
11	Risk Assessment & EMP	Identify areas where disaster can occur by fires, explosions and release of toxic substances	Obtained from Mine Plan

Source: Environment Monitoring by Envirotech East Private Limited., New Delhi, 2017-18

The scope of the study was decided based on the ToR issued by SEAC, Uttar Pradesh (refer Annex 1.2 for ToR compliance).

1.6 PROCESS FOR OBTAINING ENVIRONMENTAL CLEARANCE

As per the EIA Notification of 14th September 2006 and subsequent amendments, all 'Category A' projects require prior clearance by the Expert Appraisal Committee, Ministry of Environment, Forest & Climate Change, New Delhi and all category 'B' projects require prior clearance by the State Environment Impact Assessment Authority of the State. This report is prepared for SEIAA, Uttar Pradesh State. The environmental clearance process for new projects comprises of a maximum of four stages. The four stages in sequential order are as given below.

Stage 1 - Screening: It refers to the definite assignment of category to projects or activities where the same is not completely specified. The projects are categorized as 'A', 'B1' and 'B2'. Category 'A' projects are scrutinized and cleared through the Environment Appraisal Committee (EAC) at MoEF&CC& CC, Govt. of India. In case of Category 'B' projects, scrutiny of application is done at the State level committee respective to categorize project into 'B1' or 'B2' category. The proposed sand/morrum mine is under Category 'B1' project and shall be appraised by State Level Committee of Uttar Pradesh.

Stage 2 - Scoping: It refers to the process where EAC or SEAC determines detailed and comprehensive Terms of Reference for the EIA report and can also include site visits by the committee if required.

Stage 3 - Public Consultation: It refers to the process by which concerns of local people and other stakeholders are ascertained and their views taken regarding the project. The public consultation takes part in two steps: public hearing and written responses.

Stage 4 - Appraisal: This refers to detailed scrutiny of the application and EIA report to make categorical recommendations to the regulatory authority.

The schematic diagram of the environment clearance process for Category B project is given in Figure 1.4.

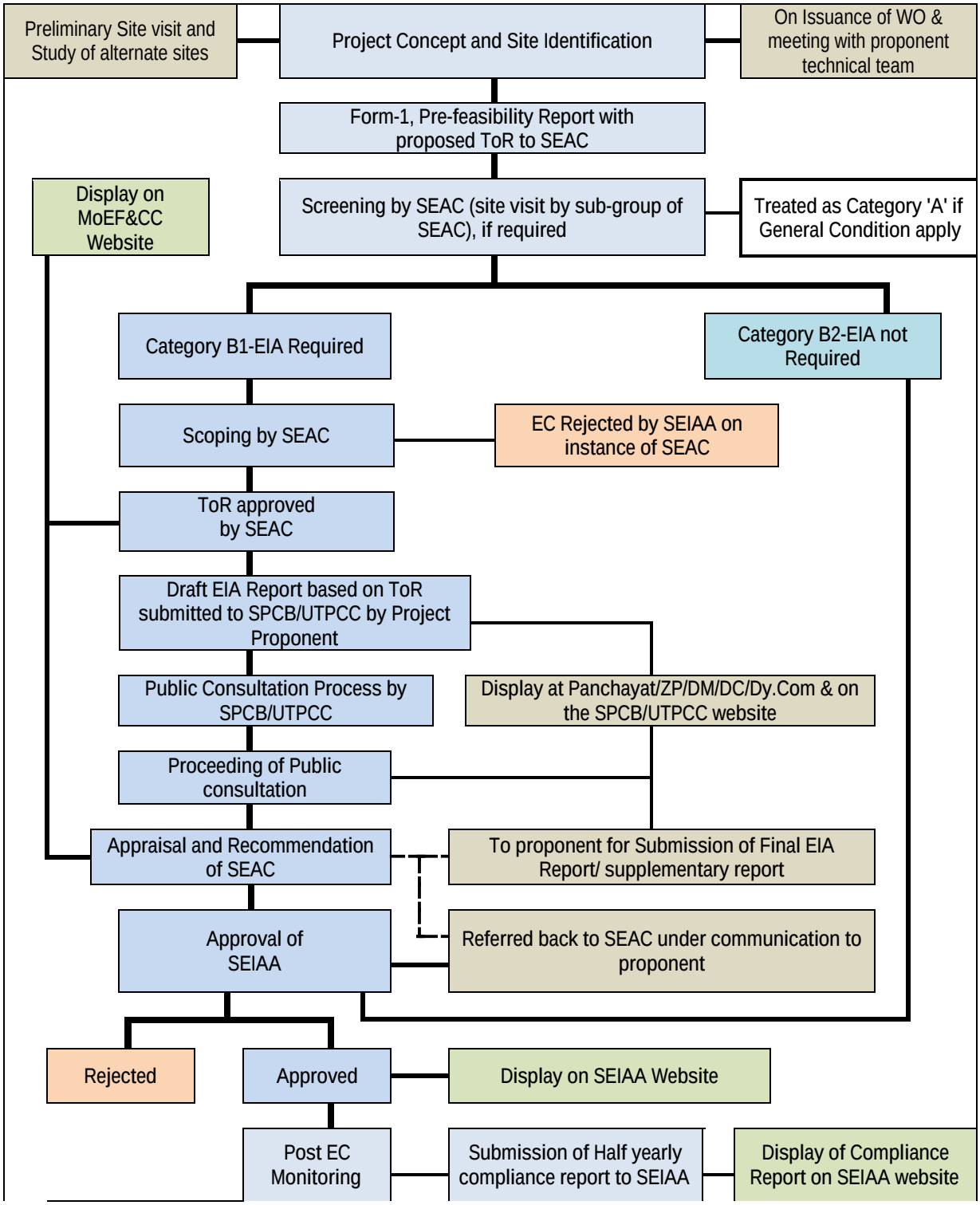


Figure 1-4: Environment Clearance Process for Category 'B' Projects

1.6.1 ENVIRONMENTAL LEGISLATIONS

The mining sector has separate set of legislations covering management, conservation, grant and operation of mining leases etc. There are also separate legislations for coal mines, metaliferous mine non-metaliferrous mines etc. In addition, there are environmental / forest regulations, applicable to all types of mining activities have been prescribed by Ministry of Environment and Forests and CPCB. The important legislations related to mining sector are given in Table 1.3.

Table 1-3: Key Legislations related to Mining Sector

Name	Scope and Objectives	Key Areas	Operational Agencies
The Mines Act, 1952	The Act prescribes the duties of the owner to manage mines and mining operation and the health and safety in mines. It also prescribes the number of working hours in mines, the minimum wage rates, and other related matters.	Regulation of labour and safety in mines	Ministry of Labour and Employment through the Directorate General of Mines Safety (DGMS)
The Mines and Mineral Development and Regulation) Act, 1957	Providing a mineral concession regime in the context of the metal making public sector undertakings	Regulation of mines and development of minerals under the control of the Union	Directorate General of Mines Safety, Government of India
Mineral Concession Rules, 1960	These rules outline the procedures and conditions for obtaining a Prospecting License or Mining Lease	The levy and collection of royalty	Ministry of Mines, Government Of India.
Mineral Conservation and Development Rules, 1988	These rules outline measures for protection and development of minerals	Conservation of systematic development of mineral	Ministry of Mines, Government Of India
The Water (Prevention and Control of Pollution) Act, 1974	To provide for prevention & control of water pollution and enhancing water quality	Control of sewage and industrial effluent discharges	Central and State Pollution Control Boards
The Air (Prevention and Control of Pollution) Act, 1981	To provide for the prevention and control of air pollution	Control emission of air pollutants	Central and State Pollution Control Boards
The Environment (Protection) Act, 1986	To provide for the protection and improvement of environment.	An umbrella legislation; supplements pollution laws	MoEF&CC, GoI
The Forest (Conservation) Act, 1988	To halt rapid deforestation & resulting environment degradation	Restriction on reservation& using forest for non-forest purpose	MoEF&CC, GoI

Name	Scope and Objectives	Key Areas	Operational Agencies
The Wildlife (Protection) Act, 1972	To provide for protection of wild animals, birds and plants; and for matters connected therewith.	Wildlife protection in forest areas	MoEF&CC, GoI
Noise Pollution (Prevention and Control) Rules 2000	To take measures for abatement of noise and ensure that level do not cross standard.	Noise in urban area and around industrial sites	Central Government, nodal agencies MoEF&CC, State governments

The MoEF&CC is the nodal agency to set up policy and standards for the protection of environment, along with Central Pollution Control Board (CPCB). This includes air, noise, water and hazardous waste standards. The relevant standards which are of significance to the proposed project are given in Annex 1.5

1.6.2 STRUCTURE OF THE EIA REPORT

The overall contents of the EIA report follow the list of contents given in APPENDIX III, Generic Structure of Environmental Impact Assessment Document of the Gazette Notification on Environmental Clearance issued by Ministry of Environment, Forests & Climate Change, Government of India vide no. SO 1533 dated 14th September 2006. The report consists of eleven chapters and the contents therein are briefly described in this section.

Chapter 1: Introduction: The present chapter gives brief outline of the project and its proponent, brief description of the nature, size, and location of the project and its importance, and extent of the EIA study, including the scope of the study.

Chapter 2: Project Description: This chapter contains the description of the project, such as the type of project, need for the project, project location, project layout, cargo handling methods, utilities and services, the project implementation schedule, estimated cost of development etc.

Chapter 3: Description of the Environment: This chapter presents the methodology of the field studies covering physical, biological and socio-economic environments, carried out to ascertain the baseline environmental condition of the study area. It includes the information regarding physical condition, water and air environment, soil characteristics, noise level, ecology and the socio economic status of the area.

Chapter 4: Anticipated Environmental Impacts & Mitigation Measures: This chapter provides details of the impact assessment of the project during construction and operational phase. It expresses the impacts of the proposed project on the various components of environment. The mathematical modeling exercise pertaining to prediction of ground level concentration of air pollutants have also been dealt in this chapter. Mitigation measures are suggested along with the impact prediction.

Chapter 5: Analysis of Alternatives (Technology & Site): This chapter gives details of various alternatives both in respect of location of site and technologies to be deployed. Alternatives have been compared in terms of their potential environmental impacts, suitability under local conditions, and institutional training and monitoring requirements.

Chapter 6: Environmental Monitoring Program: The monitoring of environmental parameters in construction as well as operation phase of the project for assessing the impact and the organization structure, which will be responsible for environment monitoring have been detailed in this chapter.

Chapter 7: Additional Studies: This chapter provides details of the additional studies conducted as per the stipulation of the ToR. The risk assessment included in this chapter provides information regarding the activities associated with the project likely to pose a risk to man, environment or property. Computation of risk assessment has been covered in this chapter. It also provides details regarding precautionary measure to be taken.

Chapter 8: Project Benefits: This chapter includes the benefits likely to accrue and improve the physical & social infrastructures for the local community in particular and region in general.

Chapter 9: Environment Management Plan: This chapter deals with the management plan and enhancement measures incorporating recommendations to mitigate the adverse impact likely to occur on environmental parameters during construction and operation phase. Post project monitoring and organization structure for environment management have been also provided in the chapter.

Chapter 10: Summary & Conclusion (This will constitute the summary of the EIA Report): This chapter summarizes the findings of the study and gives a brief of the environmental suitability of the project.

Chapter 11: Disclosure of Consultant Engaged: The detailed profile of the consultants along with their capabilities and experience are highlighted in this chapter.

Source: http://www.india-in-your-home.com/physical-map-of-india.html
Scale: Not to Scale

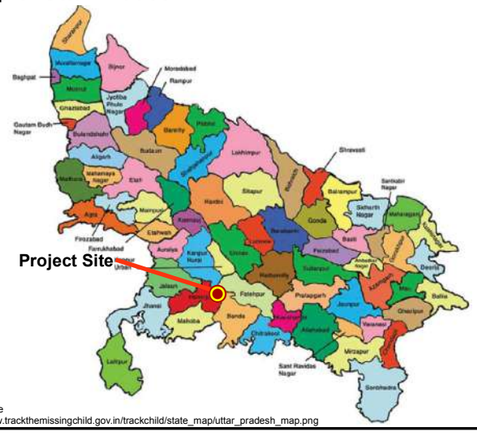
A **Map of India**

Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png
Scale: Not to Scale

B **State of Uttar Pradesh, India**

Key Map of Uttar Pradesh

217



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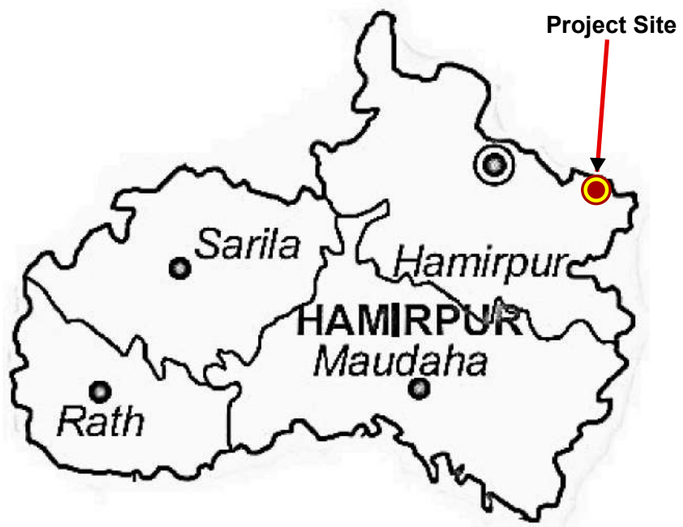
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

Project Site

1. Project Layout Plan, SY
2. Google Satellite Imagery, 2017

D **Project Site**



http://http://www.onefivenine.com/images/DistrictMaps/516.jpg
Scale: Not to Scale

C **Hamirpur District, Uttar Pradesh**

A → **B** → **C** → **D**

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2017

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Location of the Project Site

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
QCI-NABET Accrediate Environment Consultant Certificate No. NABET/EIA/1619/RA0058

Graphic Scale:
0 200 400 800 1,200 1,600 m

Drafted By:	Checked By:	Approved By:

Date	20/07/2018			
Revision	00			

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Path: D:\Projects\UP Mining\Patyora31_4\Shp\Location Map.mxd

80°15'30"E 80°16'0"E 80°16'30"E 80°17'0"E

25°56'0"N

25°55'30"N

25°55'0"N

1014

Kali Mata Mandir
काली माता मंदिर

Ram Janki Mandir
राम जानकी मंदिर

Gajha Dera

shiv Temple
शिव मंदिर

Yamuna River
यमुना नदी

B

C

1.0km

A

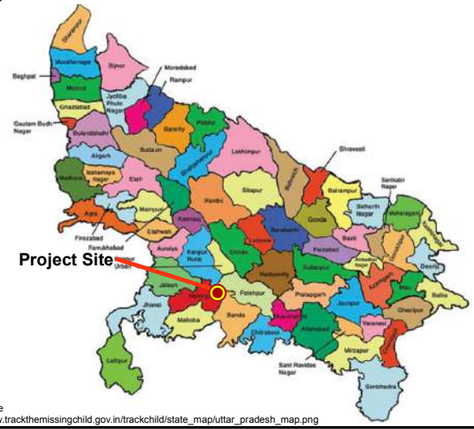
D

N

Points	Latitude	Longitude
A	25°55'21.03"N	80°16'04.85"E
B	25°55'43.32"N	80°16'22.63"E
C	25°55'31.32"N	80°16'34.75"E
D	25°55'14.06"N	80°16'19.84"E

Key Map of Uttar Pradesh

218



Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Project Site
- 1Km Buffer

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2017

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Co-ordinates of the Project Site

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
QCI-NABET Accrediate Environment Consultant Certificate No. NABET/EIA/1619/RA0058

Graphic Scale:
0 120 240 480 720 960 m

Drafted By:	Checked By:	Approved By:

Date	20/07/2018			
Revision	00			

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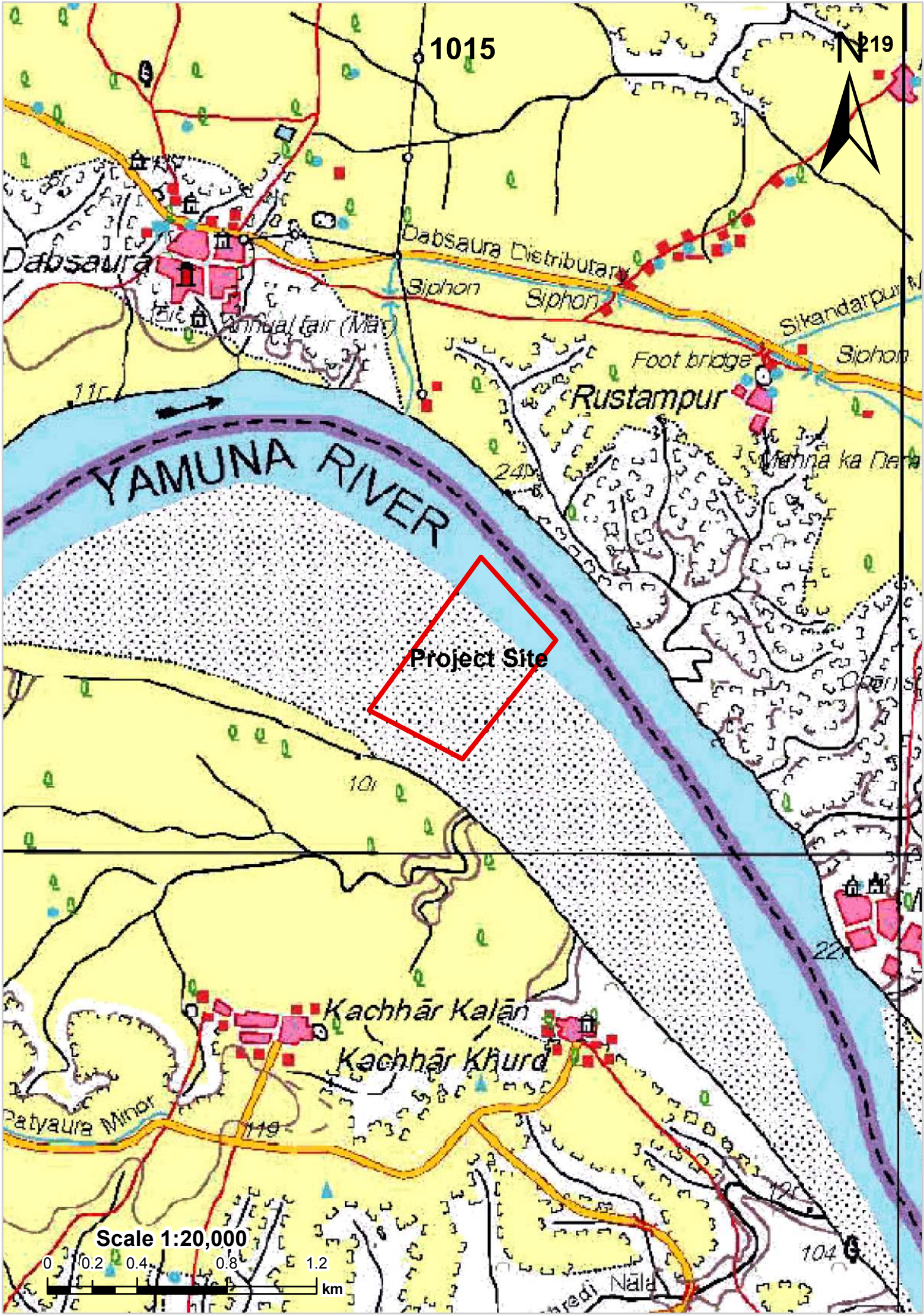
Path: D:\Projects\UP Mining\Patyora31_4\Shp\Co-ordinate Map.mxd


1015
219
N
Dabsaura
Dabsaura Distributary
Siphon
Siphon
Annual fair (Mar)
Foot bridge
Rustampur
Siphon
YAMUNA RIVER
Project Site
Kachhār Kalān
Kachhār Khurd
Scale 1:20,000
0 0.2 0.4 0.8 1.2
km

CHAPTER-2

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

This chapter contains related to the project like type of project, need for the project, project location and its layout details, project schedule and its implementation, technology and process and others on various facets of environment. The applicant Sri Sailendra Yadav has obtained Sand/Morrum mining lease through e-tendering from the Govt. of Uttar Pradesh vide Letter of Intent no. 421/khanij/-M.S.C.–tees-vividh (2017-18) dated 07.06.2018 over an area of 90.03 Acres / 36.437 ha on Yamuna river near village Patyora, Tehsil- Hamirpur, Dist- Hamirpur, Uttar Pradesh, over Khand no: 31/4. As riverbed Sand/Morrum is replenished every year hence life of mine is not applicable. The khasra map with signature of mining officer, Hamirpur is attached as Annex 2.1.

The entire mineral produced will be used in construction of roads, buildings and other infrastructures. The entire mineral will be sold to buyers in U.P. & M.P. thereby bridging the gap between demand and supply of these minor minerals in the region. This will also generate much needed employment to the local people.

2.2 DESCRIPTION

The proposed project is taken up by Sri Sailendra Yadav. The applicant is involved in construction business for many years. Detailed location details of the project site are given in Table 2.1.

Table 2-1: Location of the Block

Project Site	Village – Patyora; Tehsil – Hamirpur, District - Hamirpur; State - Uttar Pradesh		
Sanctioned Mining Lease area coordinate of 36.437 ha	Points	Latitude	Longitude
	A	25°55'21.03"N	80°16'04.85"E
	B	25°55'43.32"N	80°16'22.63"E
	C	25°55'31.32"N	80°16'34.75"E
	D	25°55'14.06"N	80°16'19.84"E
Workable area Coordinate of 29.637 ha	Point	Latitude	Longitude
	A	25°55'21.03"N	80°16'04.85"E
	B	25°55'43.32"N	80°16'22.63"E
	E	25°55'39.41"N	80°16'19.62"E
	F	25°55'28.79"N	80°16'32.80"E
Proposed Production of Mine	Production Capacity: 7,28,640 m^3 per year		
Geological reserve	11,55,800 m^3		
Method of Mining	Opencast Semi-mechanized mining as well as manual method		
Drilling and Blasting	Not Applicable		
Water Demand	17.40 KLD		
Source of Water	Nearby Villages		

Ultimate Depth of the Mining	2.60 m
Toposheet No.	63 C5
Nearest Water-body	Baredi Nala, 2.4 km, SSE
Name of Nearest Forest areas	Manjhupur Block RF, 14.4 km, WNW
Topography of ML area	Plain land
Nearest Highway	NH-86 (12km, W)
Nearest Town	Hamirpur, 11km, WNW
Nearest Railway Station	Sumerpur Railway Station (15 km, SW)
Nearest Airport	Chaudhary Charan Singh International Airport, Lucknow (110 km, NE)
Ecological Sensitive Zones (within 15km)	No notified eco-sensitive zones
Seismicity	Seismic Zone II

Source: Form 1 and Pre-Feasibility Report,

The area can be accessed from NH-86 road which is 12 km from the project site via local metal road. A haul road reaches the project site which is sufficient for the transportation of materials through trucks and dumpers. The transportation of mined out materials via trucks will be complying the guidelines of Indian Road Congress so that there is minimum impact on the environment. A brief description of the project is given in Table 2.2.

Table 2-2:Description of Project

Mining lease area	90.03 acres / 36.437 ha
Number of blocks	One
River	Yamuna River
Land Type	Non-Agricultural Government land on river bed
Category of the project	"B1"
Working days	250 dry days/year except monsoon
Minerals of the Mine	Sand/morrum
Geological reserve	12,55,800 m^3
Mineable Reserves	7,48,010m^3
Proposed production of mine	7,28,640 m^3
Method of Mining	Opencast semi-mechanized mining without drilling and blasting
Ultimate Depth of the Mining	2.60 m from surface
Water table depth	10-20bgl
Water requirement and source	Water will be taken from hired tankers. The water requirement for mining & allied activities, drinking and plantation has been estimated to be 17.40KLD (Dust suppression- 7.20 KLD, Drinking- 1.80 KLD and Green Belt- 4.80KLD).
Average Man Power/Day	180
Solid waste generation	No solid waste will be generated during mining. Entire excavated

	materials will be transported.
Project Cost	Rs. 185 lakhs

Source: As per Approve Mine plan for Patyora Sand/Morrum Mine prepared by Umesh Pratap Singh Chauhan Reg. No. RQP/DDN/165/2005/A

2.3 MINING AREA

The proponent has taken an area of 36.437 ha on lease as per LoI. The lease has been sanctioned vide letter no. 421/khanij/-M.S.C.–tees-vividh (2017-18), dated 07.06.2018 and has been allotted to Sri Sailendra Yadav A letter from district mining officer regarding presence of adjacent leases in the 500m radius of the project site is attached as Annex 2.3.

2.4 TOPOGRAPHY AND GEOLOGY

2.4.1 TOPOGRAPHY

The terrain of Hamirpur situated in the Peninsular Shield, is differentiated into a rocky surface of Bundelkhand highland and alluvium surface of Ganga Plain. The rocky surface, attaining elevations of 225 to 335m, contains pediment and dissected denudational hills, The Ganga Plain, with elevation of 110 to 250 m in the northern part, consists of upland and lowland. Banda Plain and Varanasi Plain constitute upland. Banda Plain is rolling with inselbergs and is sandy to gravelly, whereas Varanasi Plain is flat and silty in nature. The lowland is 10 is 30m lower than the upland. It is developed along Yamuna, Betwa and Dhasan rivers and comprises Older Flood Plain and Active Flood Plain. Two levels of terraces are developed along Yamuna and Betwa rivers.

2.4.2 REGIONAL GEOLOGY

Geologically the Hamirpur district area is underlained by Bundelkhand gneissic complex (BGC) with a capping of quaternary deposits. The Bundelkhand granites (BGC) and the banded gneisses of Archean age display heterogeneity in texture and composition and are pegmatite in places. They are at certain localities traversed by quartz reef i.e. near Kabrai and basically intrusive of doleritic composition i.e. SW of Kharka. A few typical basic dykes trending ENE – WSW originating from the south – western extremities of the area continue towards Mahoba. The major bulk of metamorphic rocks are exposed as isolated hills in the southern fringes of the area mapped. The older alluvium on the other hand, comprises finer grained, well compacted and more mature sediments occupying extensive stretches at relatively higher elevations. These sediments, related to some earlier fluvial episodes, have been at most places stabilized by vegetation and majority of the badlands are sculptured within it. These sediments characteristically display red and brown colour and are richer in ferruginous content. These older alluvium supports most of the vegetation in the terrain because of its higher moisture retaining capabilities. The younger alluvium, which is confined to the recent channel fill deposits and present day flood plains or rivers/streams, occurs as narrow strips at lower levels. The sediments are light coloured, coarse to very coarse and gravely, poorly sorted and not too well inundated. These immature sediments are relatively deficient in clay/silt fractions and also ferruginous matter.

Geomorphologically the area can be sub-divided into four major units:

I. Recent channel – fikk and present day flood plain deposits and adjacent lowland areas.
II. Upland areas/ river terraces (older alluvium surface).

III. Badlands / ravenous tracts.

IV. Residual hills.

2.4.3 LOCAL GEOLOGY

The area is dominated by medium to fine sand geologically the area comprising of terrace alluvium deposited in depositional terraces of old rivers & contain cyclic sequence of yellowish micaceous fine to course grained sand. It is angular two subangular and the angularity of the grains of this category of sand decreases with depth. The Litho unit shown on the geological map of the leased out area have been plotted on the basis of physical characteristics observed in the field.

2.5 QUALITY OF RESERVES

Sediments of various sizes and in mixed form are predominantly deposited in the river bed and outside the river bed as well in the central part. They are deposited in a mixed state. The classification is done by grab mining and the sediments are passed through different sieves in the screening plants.

Sediments of various sizes and in mixed form are predominantly deposited in the river bed and there is no perfect classification between sediments. These may be called as coarse sand, medium sand and fine sand. The term sand is used to denote an aggregate of mineral or rock grains greater than 1/16mm and less than 2 mm in diameter.

2.6 MINING METHOD

The mining is confined to collect Sand and morrum from the river bed. Sand/Morrum Mining will be carried out only up to a depth of 2.60 m, whichever is less, by following dry pit mining. The mining method will be opencast semi mechanized with manual method. The river bed material will be collected in its existing form. Excavation of river bed minerals will commence from the top within the area and commence towards down removing the minerals in 0.50m slices. Ultimate depth of each bench will be 1 m. Mining will be restricted upto a maximum depth of 2.60m only.

The entire area does not require excavating at once. About 7,28,680 cum production of River Sand /Morrum have been proposed to meet the market requirement.

The mineral extraction will be done for a period of Five years from the date of Execution. During this period the areas of mining quarry will be free from submergence. During mining operation the river flow will be a way to enable dry pit mining.

In the lease area the river flow being reduced and sediment load get deposited During flood season, the area gets sediments and source of erosion at this location is meager.

The General guidelines of the Ministry of Environment and Forests as also of the Geological Survey of India will be followed the most important is as under:

- Dry pit mining will be followed which means mining at all times will be above the flowing river water level. Mining activity will be immediately stopped when water comes in the mining pits.
- Stream will not be diverted to form inactive channel.
- Mining at the concave side of the river channel will be avoided to prevent bank erosion.

- Mining will be restricted minimum 3m away (inward) from river bank to minimize effect of river bank erosion and to avoid consequent channel migration. Plantation will be done on such area to isolate mining operation from the rest of the area.
- Mining will be restricted in monsoon season i.e 1st July to 30th September.
- Area of mining lease will be demarcated prior to mining for sustainable development and Pucca Pillars will be erected on ground.
- No mining operations shall be carried out in proximity of any bridge and or embankment.
- Mining will be done Manual / Semi -mechanized Method.
- No mining operations shall be carried out in proximity of any bridge and or embankment. Gate/Check Post with CCTV camera & R.F.I.D Scanner will be built-up and will be ensured all such facility in working condition by the owner.
- Further Rules & Regulations modified time to time by State govt. shall be adhered.

Table 2-3:Geological Reserves

Sl. No.	Classification	UNFC code	Quantity of Sand / Morrum in m^3
A	Mineral Reserve		
1	Proved Mineral Reserve	111	12,55,800
2	Feasibility Mineral Resource	122	-
		Total	12,55,800

Source: As per Approved Mine plan for Patyora (KHAND 31/4) Sand/Morrum Mine prepared by Umesh Pratap Singh Chauhan Reg. No. RQP/DDN/165/2005/A

2.6.1 MINING STRATEGY AS PER APPROVED MINING PLAN

The following parameters will be considered for benching and mining as per mine plan.

Table 2-4: Dimension of the pit as per mining plan

Face Length (m)	Face Length (m)	Face Advancement (m)	Depth (m)	Closing Balance in Cum	Saleable Reserve in Cum
96-95	675	440	1	0	297000
95-94	665	430	1	0	285950
94-93.40	655	420	0.60	19370	145690
Total				19370	7,28,640

The considerations undertaken at the project site during mining plan preparation are as follows:

Table 2-5: Considerations undertaken at the project site

Considerations	Details
Total Lease area	3,64,370 m^2
Submerged Lease area under water	35,720 m^2
Total Workable Area	3,13,950 m^2
Peripheral 7.5m Buffer Area	16,950 m^2
Total Minable area after removing 7.5m Buffer Area	2,97,000 m^2
Total Minable Reserves (Considering 2.6m depth)	7,48,010 m^3
Total Saleable/Sanctioned Reserves/Production as per LOI/ Approved	7,28,640 m^3

Mining Plan (Per Year)

2.6.2 MINING STRATEGY AS PER SUSTAINABLE SAND MINING GUIDELINE - 2016

The following parameters will be considered for benching and mining as per sustainable sand mining guideline.

Table 2-6: Dimension of the benches as per Sustainable Mining Guideline

Face Length (m)	Face Length (m)	Face Advancement (m)	Depth (m)	Closing Balance in Cum	Saleable Reserve in Cum
96-95	675	440	1	0	297000
95-94	665	430	1	0	285950
94-93.40	655	420	0.60	19370	145690
Total				19370	7,28,640

2.6.3 PRODUCTION PROGRAMME

The Production programme from the mine for the next 5 years as per SSMMG-2016 is given below is shown in Table 2.7

Table 2-7: Production Programme

Year	Over burden (m^3)	ROM sand/morrum (m^3)	Saleable sand/morrum(m^3)
1st	-	7,48,010	7,28,640
2nd	-	7,48,010	7,28,640
3rd	-	7,48,010	7,28,640
4th	-	7,48,010	7,28,640
5th	-	7,48,010	7,28,640

Note : As per Approved Mine plan for Patyora (KHAND 31/4) Sand/Morrum Mine prepared by Umesh Pratap Singh Chauhan Reg. No. RQP/DDN/165/2005/A the production program is 7,28,640 cum per year ;totaling to 36,43,200 cum in (05) years as per LoI. However , as per SSMMG-2016 the sustainable production is also matched with approved mine plan.

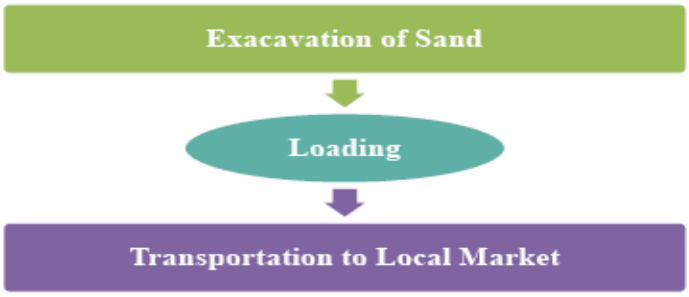


Figure 2.1 Process Flow Chart of Mining of Sand

2.6.4 RECLAMATION OF MINED OUT AREA

There is no generation of over burden/ waste material in case of river bed mining. No backfilling has been proposed in the excavated zone in river bed. River bed will be replenished by sediments during rainy season.

Ultimate shape & size of pit:

The ultimate slope of pit by the end of conceptual period shall be same as the shape of area. Size of the lease hold by the end of conceptual period shall be 29.70 Ha having length 675m & width 440m & depth 2.6m

Conceptual Development:

Mining will be by opencast semi-mechanized means confined within ultimate pit limit. Road, habitation etc. will require diversion from mining area for the safety of workings.

The geometry of pit as on date, at the end of plan period & at the end of conceptual period is as below:

Table 2-8: Geometry of pit at the end of plan & conceptual period

	Pit dimension			Shape
	L (m)	W (m)	D (m)	
As on date	-	-	-	-
At the end of plan period	675	440	2.60	Rectangle
At the end of conceptual Period	675	440	2.60	Rectangle

Source: As per Approved Mine plan for Patyora (KHAND 31/4) Sand/Morrum Mine prepared by Umesh Pratap Singh Chauhan Reg. No. RQP/DDN/165/2005/A

2.6.5 EXTENT OF MECHANIZATION:

The mining operation will be semi-mechanized. The maximum level of annual production planned = 7,28,640 cum production required assuming 250 working days

= 7,28,640 /250= 2914.56

Say= 2915 cum/day

Assuming bulk density of Sand/Morrum 1.8 = 2915×1.8=5247 Metric Tonnes/day

Following machineries shall be deployed for the exploitation & transportation of Sand/Morrum as per requirement:

- Scrapper/Excavator/Loader
- Truck dumper/tipper
- Tractor Trolleys
- Water sprinkler
- Other light Vehicles
- Spade, shovels, mattocks, chisel etc.

2.6.6 LAND USE PATTERN OF MINING AREA

Land use pattern at various phases will be as follows:

Table 2-9:Land Use Pattern of Mining Area

Sl. No.	Type of Land Use	Total Value (in Hectares)
Present		
1	Quarry Area	0.000
2	Infrastructure (road)	0.000
3	Agriculture	0.000
4	Plantation	0.000

5	Habitation	0.000
6	Soil dump	0.000
7	OB dump	0.000
8	River bed area	36.437
	Total	36.437
	During Mining	
1	Restricted area (7.5m mining area boundary, 20% of total lease area submerged under Yamuna River stream water, 3m barrier from periphery of stream water, and area under water)	6.737
2	Plantation (to be done outside the lease area)	0.000
3	Available area for mining	29.70
	Total	36.437
	End of Lease Period	
1	Restricted area (7.5m mining area boundary, 20% of total lease area submerged under Yamuna River stream water, 3m barrier from periphery of stream water, and area under water)	6.737
2	Naturally reclaimed in river bed	29.70
3	Un-worked river bed	0.000
4	Plantation (to be done outside the lease area)	0.000
	Total	36.437

Source: As per Approved Mine plan for Patyora (KHAND 31/4) Sand/Morrum Mine prepared by Umesh Pratap Singh Chauhan Reg. No. RQP/DDN/165/2005/A

2.7 GENERAL FEATURES

2.7.1 SURFACE DRAINAGE PATTERN OF YAMUNA RIVER

The Yamuna also known as the Jumna, is the longest and the second largest tributary river of the Ganges (Ganga) in northern India. Originating from the Yamunotri Glacier at a height of 6,387 meters on the southwestern slopes of Banderpooch peaks in the uppermost region of the Lower Himalaya in Uttarakhand, it travels a total length of 1,376 kilometres (855 mi) and has a drainage system of 366,223 square kilometres (141,399 sq mi), 40.2% of the entire Ganges Basin, before merging with the Ganges at Triveni Sangam, Allahabad, the site for the Kumbha Mela, every twelve years. It is the longest river in India which does not directly flow to the sea.

This river forms the north boundary of the district. The river first touches the district at the village Haraulipur in tehsil Hamirpur, where it forms a sudden loop. Flowing then east to Jamrehi Tir, it curves abruptly south to Sikrohi and then continues south-east part Hamirpur to Baragaon where the Betwa joins it. Its length in Hamirpur district is approximately 56 km.

2.7.2 VEHICULAR TRAFFIC DENSITY

The traffic density in the nearest highway is expected to increase as the project will involve transportation of mined minerals via trucks to different locations. The number of trucks will depend on per day production. As per production programme, 324 trucks are needed for Patyora (Khand No.:31/4) mining project.

2.8 PROJECT REQUIREMENT

2.8.1 POWER

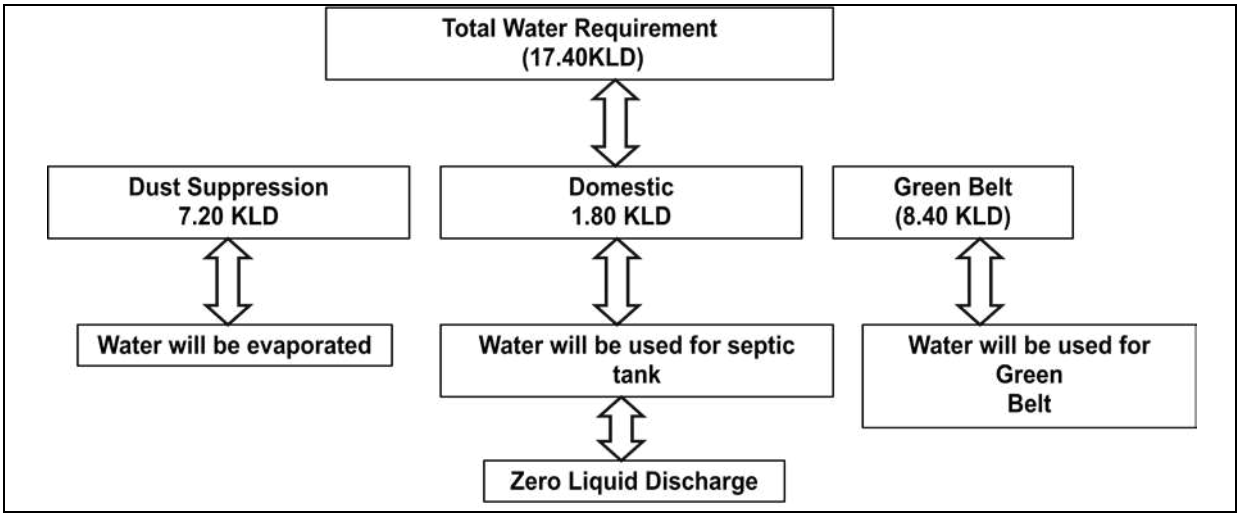
Electricity connection is not required for the project. Mining will be carried out in day time only. Diesel required for machinery will be outsourced from nearby villages.

2.8.2 WATER

The water supply for drinking purpose proposed will be made available by hiring tankers from nearby villages.

Table 2-10:Water Requirement

Activity	Requirement (KLD)	Basis
Drinking	1.80	0.01 KLD per person
Green Belt	8.40	No. of Plants × Area occupied by one tree × 3.70 liter
Dust Suppression	7.20	Approach Road X Width of Road X 0.40l /m^2 X 2 times in a day)/ 1000
Total	17.40	



Note: Water requirement is fulfilled through hired Tankers. Therefore there is no need of clearance from the COMPETENT AUTHORITY AS THERE WILL BE NO GROUND WATER WITHDRAWAL BY THE PROJECT PROPONENT

Figure 2.2 Water balance diagram

2.8.3 INFRASTRUCTURE

The workers are mostly locals living in the close proximity of area and will work in shifts during day time only thus there is no requirement of major infrastructural facilities at the site. The following infrastructure facilities will be made available for the workers.

Infrastructure facilities like site office, first aid station, rest shelter/ store, drinking water facility etc. will be established within the river bank.

The details of site services that will be provided are:

i. Mine office

One competent Manager and one Assistant Manager will be required to supervise the mining operations. A temporary office for Manager 5 x 3 meters shall be provided at the River bank. An additional room for other supervisory staff is also proposed at each mine.

ii. Rest shelter

Rest shelter should be provided to the employee. The rest shelter will be for having rest during the lunch hours by the workers/ labour. The size of rest shelter shall be about 10 x 3 meter to accommodate the workers.

iii. Canteen -cum-washroom facility

In order to provide the rest shelter for the workers working in the mine and also to provide tea etc. The arrangement shall be made to install a Canteen -cum-washroom and shall be utilized by the workers.

iv. First Aid Room

To provide the first aid for any sort of injuries encountered during the mining operation, one small first aid room shall be provided at each sub block. First aid kit and sufficient stock of material/medicines needed forfirst aid shall be provided as per requirement. As the Mining Engineer/Manager and Mining Mates arequalified first aides, they can provide first aid to the labor on the spot.

v. Water Supply

The water supply for drinking purpose proposed will be made available by hired tanker.

2.9 MANPOWER

Man power will be about 180 persons as per the details given in Table 2.8.

Table 2-11:Manpower Requirement during Operative Phases

Sl. No.	Designation	No of Employees
1	Mining Engineer	2
2	Geologist	1
3	Foreman	1
4	Supervisor	2
5	Guard	4
	Unskilled Worker	170
	Total	180

Source: As per Approve Mine plan for Patyora Sand/MorrumMine prepared by Umesh Pratap Singh Chauhan Reg. No. RQP/DDN/165/2005/A

The maximum quantity of Sand/Morrum to be exploited 7,28,640 cum/annum. Considering 250 working days in calendar year 2914.56 cum Sand/Morrum shall be exploited per day.

2.10 PROJECT IMPLEMENTATION SCHEDULE

This is a new mining area allotted to the applicant. Future production programme has been planned as per the details given below:

- Mining lease has been allotted for a period of 5 years only.
- Mining area consist of 36.437 ha area in Patyora village of 31/4 Khand out of which about 6.737 ha area is under restricted zone.
- About 29.7 ha area is free from restriction and the mining is proposed in this area only.

Daily production proposed is 2914.56 m^3

Say= 2915 cum/day

Working days have been taken as 250 days per annum.

Projected production per year = 250 x 2914.56= 7,28,640 m^3

CHAPTER-3

3 DESCRIPTION OF ENVIRONMENT

3.1 GENERAL

Baseline data generation forms a part of the Environmental Impact Assessment (EIA) study and helps to evaluate the predicted impacts on the various environmental attributes in the study area by using scientifically developed and widely accepted impact assessment methodologies for greenfield projects. Baseline data is also required in preparing an Environmental Management Plan (EMP) outlining the measures for improving the environment quality and scope of future expansions for environmentally sustainable development.

3.2 STUDY AREA

An area of 10 km (aerial distance) from the boundary of the mine lease area is the study area for the EIA study. As already mentioned, the project is located at Patyora village in Hamirpur Tehsil, Hamirpur District, Uttar Pradesh. The study area is part of the Survey of India topography sheet no. *63 C/1, 63 C/5, 63 B/4, 63 B/8*. The study area has been divided into two zones v.i.z core zone and buffer zone, where the core zone is the Mine Lease area and the buffer zone is the study area of 10-km from the Mine Lease boundary, excluding the ML area. The relevant Study Area Map is given in Figure 3.1.

3.3 STUDY PERIOD AND METHODOLOGY

The baseline study was conducted at the time, along with Patyora 31/7, during the Summer Season (March - May) season of 2018. An in-depth field monitoring study for environmental attributes of the study area was carried out for baseline environment assessment.

Baseline data was generated for various environmental parameters including ambient air, water (surface and ground water), land and soil, ecology and socio-economic status to determine quality of the prevailing environmental and social settings. A temporary field office was set up at Patyora Village for the purpose of data collection, due to its location proximity to the ML area. The team stationed at site consisted of functional area experts of respective fields as well as field and office assistants. The Environment Coordinator for the study also visited the site twice during the study period to ascertain proper collection of data. Sampling of soil and water, monitoring of air quality and noise level and other field data were carried out by the team operating from this field station. The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of sample analysis, etc. are given in Table 3.1.

Table 3-1: Methodology for Sample Collection & Analysis

Sl. No	Component	Primary Data					Secondary Sources/ References
		Frequency of Sampling	No. of Locations	Parameters	Instrument	Method	
1	Meteorology	Continuous for whole	1	Temperature, Humidity,	Automatic weather	-	30-years IMD data from

Sl. No	Component	Primary Data					Secondary Sources/ References
		Frequency of Sampling	No. of Locations	Parameters	Instrument	Method	
		season on hourly basis		rainfall, wind speed and direction	monitoring machine with data logger		Climatological Tables (1971 – 2000)
2	Ambient Air Quality	24 hourly samples twice a week for 3-months	4	PM_{10}	Respirable Dust Samplers (APM 460 BL) with gas attachment	Gravimetric	-
				SO_2		West & Gaek	-
				NO_2		Jacobs & Hochheiser	-
				$PM_{2.5}$	Fine Particle Sample	-	-
				CO	NDIR	Infrared Analysis	
3	Noise Level		4		Integrated sound level meter.	Measurements were taken by following CPCB procedure	-
4.	Water Quality	Once in study period	2 GW 3 SW	Physical, chemical and heavy metals	Spectro-photometer Atomic Absorption Spectro-photometer Flame Photometer	Titrametric, gravimetric, photometric, AAS	APHA IS10500: GW Designated Best Use of Water as per CPCB : SW
5.	Soil Quality	Once in study period	3		Kjeldal Nitrogen, PH meter, conductivity meter, hydrometer	Gravimetric, photometric	Agriculture Handbook
6.	Ecology	Once in study period	Study Area	Flora, fauna	Field data collection	Quadrant	Forest Working Plan, Dwarka
7.	Socio-economic	Once in study period	Core zone & buffer zone	Demographic, social, economic & infrastructure	Survey Schedule	Village-level Survey, Group Discussion	Census of India 2001/ 2011, BPL List, Revenue Deptt data

Source: On-site monitoring/sampling by Envirotech East Private Limited, Kolkata

3.4 REGIONAL & LOCATIONAL SETTING

3.4.1 PROJECT LOCATION

The proposed mining of sand/morrum over an area of 90.03Acres / 36.437ha on Yamuna river near village Patyora, Hamirpur tehsil of Hamirpur district of Uttar Pradesh, over Khand no: 31/4.

3.4.2 CONNECTIVITY

Patyora Sand/Morrum mine on Yamua river is situated about 4 km WSW from SH – 13 and 12 km W from NH - 86. Sumerpur Railway Station is about 15 km away from the mine site in SW direction. Nearest Airport is Chaudhary Charan Singh International Airport, Lucknow at a distance of 110 km in NE direction.

3.4.3 SENSITIVE LOCATION

The following table gives a list of the sensitive locations present within 15 km of the project site (refer Figure 3.2).

Table 3-2: Sensitive Locations in the Study Area

Sl. No.	Features	Distance (km)*	Direction*
Forests			
1	Badanpur R.F	14.9	WNW
2	Manjhupur Block R.F	14.4	WNW
Water Bodies			
1	Yamuna River	Project Site	
2	Non River	4.8	ENE
3	Nala	11.3	E
4	Baredi Nala	2.4	SSE
5	Sanauli Bujurg Canal	4.0	SSW
6	Patyaura Canal	4.4	SW
7	Betwa River	5.6	W
8	Mahila Nala	10.4	WSW

**- Distance and direction are in respect of nearest mining block and on the basis of aerial distance*

3.5 LAND ENVIRONMENT

3.5.1 LAND-USE PATTERN OF THE STUDY AREA

The term land-use indicates the way in which the land is utilized for different purposes. The landuse of the study area was carried out by utilizing following principal sources, namely,

Toposheet No. *63 C/1, 63 C/5, 63 B/4, 63 B/8* on 1:50000 scale	SOI Nakshe
Liss III Satellite Imagery	NRSA, Hyderabad
Google Earth image of 2017	Google Earth

Based on the above sources, the land-use distribution of the study area is given in Table 3.3. The land use table can be meaningfully interpreted from the pie diagram in Figure 3.4 and as land-use map of the study area Figure 3.3.

Table 3-3: Land-use of the Study Area

Landuse	Area In ha	Area in %
Builtup	803.61	2.4
Water Body	981.16	2.9
Sandy Area	1517.41	4.5
Open Scrub	4345.99	12.8
Industry	10.3	0.0
Agriculture Land	26258.59	77.4
Total Area	33917.06	100

Source: (i) Toposheet No. 63 C/1, 63 C/5, 63 B/4, 63 B/8 on 1:50000 scale (ii) Google Earth Image of 2017

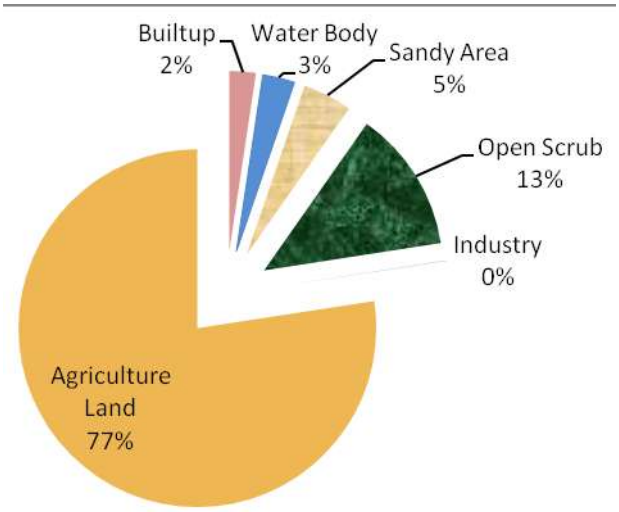


Figure 3.3: Land-use Pattern of the Study Area

As clearly depicted in the pie-chart aside, about 77.4% of the study area is agricultural land followed by about 12.8% of Open Scrub. Other major land uses are sandy area, water body area, occupying about 4.5% and 2.9% respectively. The rest is made up of water bodies, forest land and waste land.

So overall we can predict that our study area majorly being sandy with very little human habitation and presence of some forests, the envisaged impact of mining would be very less

.

3.5.2 LAND-USE PATTERN OF THE PROJECT SITE

A site visit was carried out for the entire project site and the land features were compared with the satellite images for data verification. As the mining site is a river bed, the total area either falls under sandy area or under river water. In this case the entire area is sandy.

Table 3-4: Land-use of the Project Site

Landuse	Area in Ha	Area in %
Waterbody	5.987	16.4
Sandy Area	30.450	83.6
Total Area	36.437	100.0

Source: (i) Landsat Satellite Image, NRSA, Hyderabad (ii) Toposheet No. 63 C/1, 63 C/5, 63 B/4, 63 B/8 Survey of India, Dehradun

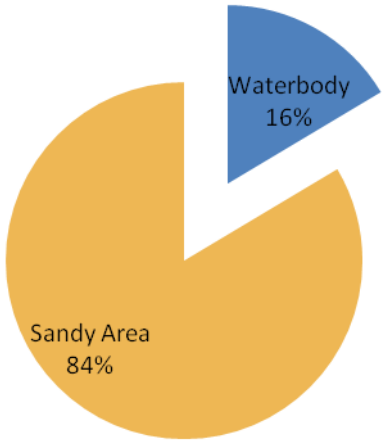


Figure 3.5: Land-use Pattern of the Project site

3.5.3 LAND USE PATTERN OF THE PROJECT SITE

The land where the proposed mining activities will be carried out has been taken on lease by the project proponent. There are no R&R issues involved with this project. The relevant land documents and the LoI are attached as Annex 1.4.

3.5.4 DRAINAGE PATTERN OF THE STUDY AREA

Drainage of Hamirpur district is quite unique in characteristic because of diversified geological formation with lithological and chronological formations, complex tectonic frame work, climatological dissimilarities and various hydro-chemical conditions. Studies have revealed that aquifer groups of alluvial soil/ soft rocks even transcend the surface drainage boundaries. These being ravenous terrain, the drainage density is very high and various small streams flow into the major rivers.

River Yamuna enters in Hamirpur District near Misripur reserved forest then passes through Haraulipur village. Subsequently, river pasess through Manki Kalan, Manki Khurd, Dadri, Misripur and Bhaura is the last census village through which Yamuna river passes in District Hamirpur.

River Betwa enters in Hamirpur in Chandawari Danda reserved forest. and subsequently passes through Ghuraull and Mangrauth villages. In Chandwari Danda, river Dhasan meets with river Betwa. In between vil1age Baragaon and Sultanpur, Betwa joins Yamuna River.

River Dhasan enters in Hamirpur District near Jhinna Bira reserved forest then passes through Kuchhechha R.F. Subsequently river pasess through Derra Khurd and Ramgarh R.F. and Chandawari Danda is the last village after which Dhasan river meet with Betwa River.

River Ken enters in Hamirpur District near reserved forest before Khairthen passes through various villages and exits after Garha village of Hamirpur.

Due to the small streams flowing in major rivers of Hamirpur, drainage of the district has become very dense. To support the irrigation system of Hamirpur more than 25 minors, 10 canals and 5 distributaries are functional in Hamirpur. These drains are periodically cleaned for silt removal which is further used for filling purpose. The district contains more than 15 tals (ponds) which help in ground water recharge and its clay may be used by local people. A drainage map of the study area is enclosed as Figure 3.5.

3.6 PHYSICAL ENVIRONMENT

3.6.1 SEISMOLOGY

Entire Uttar Pradesh is divided into seismic zones II, III and IV. The project site falls under seismic zone II which is a low damage risk zone (MSK VI or less).

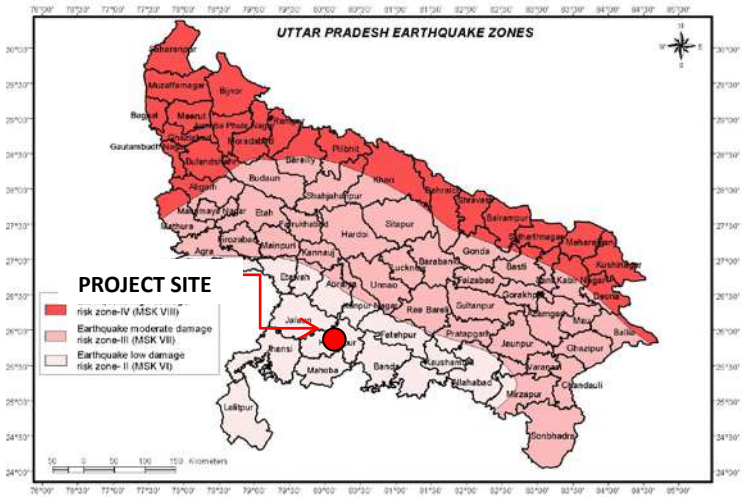


Fig:3.6 Seismicity map of Uttar Pradesh

3.6.2 FLOOD HAZARD

The Yamuna River is prone to floods during high monsoonal seasons. Unlike the Yamuna, the Yamuna River is not prone to floods. The flood hazard map of Uttar Pradesh showing the project site is attached as Figure 3.6.

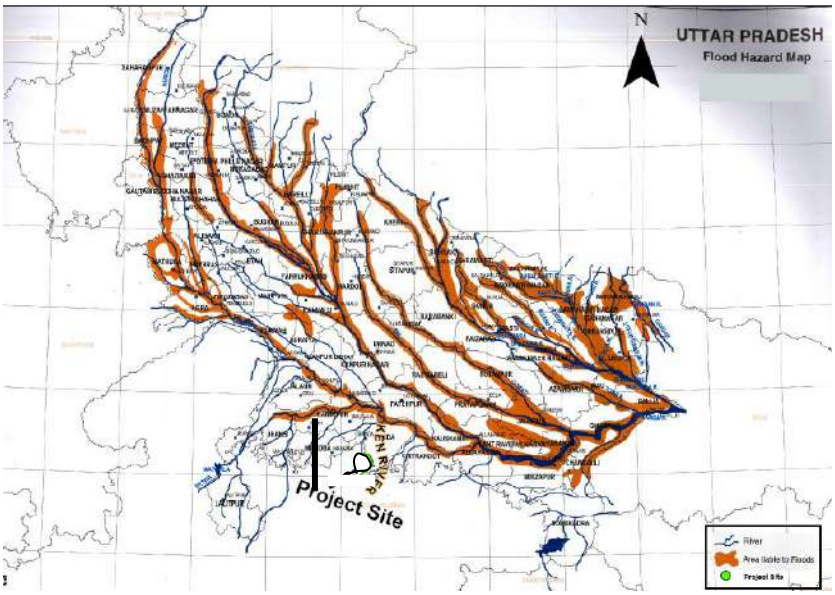


Fig:3.6 Flood hazard map of Uttar Pradesh

3.7 SOIL TYPE & CHARACTERISTICS

Soil quality of the study area is one of the important components for environment impact assessment. The composite soil samples were collected from the study area and analyzed for different parameters. The locations of the monitoring sites are given in Table 3.5 and depicted in Figure 3.8.

Table 3-5: Soil Sampling Locations

Sl. No.	Soil Sampling Station	Sample Code	Distance	Direction

Sl. No.	Soil Sampling Station	Sample Code	Distance	Direction
1	Kachhar Kalan	S1	2.4	SW
2	Kachhar Khura	S2	0.9	SE
3	Patyora	S3	3.13	WSW

Source: On-site monitoring/sampling by Envirotech East Private Limited, Kolkata

3.7.1 METHODOLOGY

For studying soil profile of the region, four sampling locations were selected to assess the existing soil conditions in and around the project area representing various land use conditions in Summer season (March to May 2018). The physical parameter and chemical parameter were determined. The soil samples were collected by random grid method of 10 m x 10 m grid by ramming a core-cutter into the soil up to a depth of 90 cm. Composite samples has been collected from each grid, by mixing of eight sub-samples and reducing the weight to approximately 500 gm by conning and quartering method. The samples were packed in polyethylene bags and assigned a number. The collected samples were air dried at room temperature in the laboratory and lightly crushed with mortar-pastlel and passed through 2 mm sieve. The soil samples were analyzed for the physico-chemical properties by standard procedure as presented in Table 3.6.

Table 3-6: Analytical Technique for Soil Sample

Sl. No.	Parameters	Analytical Method	Reference
1	Texture	Sieve analysis & Hygro meter	------
2	Moisture Content	Gravimetric	Department of Agriculture & Cooperation, Govt of India Page No. 76-77:2011
3	pH	pH meter	IS2720- Part 26, 1987 by pH meter
4	Conductivity (1:2)	Conductivity meter	Department of Agriculture & Cooperation, Govt of India Page No. 81-82:2011
5	Organic Matter	Black method	IS2720-(Part 22),1972, Reaffirmed 2001
7	Organic Carbon	Calculation	IS2720-(Part 22),1972, Reaffirmed 2001 (By Calculation)
8	Potassium	Flame Photometric	TM-S/13
9	Phosphorus	Spectrophotometric	TM-S/11
10	Nitrogen	Distillation & Titration	TM-S/17
11	Infiltration Rate		TM-S/40
12	Bulk Density	Sand replacement, core cutter	TM-S/34
13	Porosity		TM-S/33

The soil quality as analyzed from the collected samples is given in Table 3.7.

Table 3-7: Soil Characteristics of the Study Area

Sl. No	Parameters	Unit	Kachhar Kalan	Kachhar Khura	Patyora
1.	Soil colour	----	Brown	Brown	Brown
2.	pH	----	7.3	6.9	7.1
3.	Electrical Conductivity	µmhos /cm	173	206	199
4.	Moisture	%	4.6	4.8	5.3
5.	Bulk density	gm/cm3	1.36	1.17	1.13
6.	Organic Carbon	%	0.10	0.15	0.16
7.	Organic matter	%	0.18	0.26	0.27
8.	Nitrogen as N**	kg/ha as P	148.2	157.3	165.6
9.	Phosphorus**	kg/ha as P	24.8	30.3	29.7
10.	Potassium as K**	kg/ha as K	149.6	72.8	176.4

*- *Distance and direction are in respect of nearest mining block and on the basis of aerial distance*

** *NPK Data collected from secondary source*

Source: On-site monitoring/sampling by Envirotech East Private Limited, Kolkata

Table 3-8: Standard Classification of Soil

Sl. No.	Soil Test	Classification
1.	pH	• <4.5 Extremely acidic • 4.51- 5.50 Very strongly acidic • 5.51-6.0 moderately acidic • 6.01-6.50 slightly acidic • 6.51-7.30 Neutral • 7.31-7.80 slightly alkaline • 7.81-8.50 moderately alkaline • 8.51-9.0 strongly alkaline • 9.01 very strongly alkaline
2	Salinity Electrical Conductivity (ppm) (1 ppm = 640 µmhos/cm)	• Upto 1.00 Average • 1.01-2.00 harmful to germination • 2.01-3.00 harmful to crops (sensitive to salts)
3	Organic Carbon (%)	• Upto 0.2: very less • 0.21-0.4: less • 0.41-0.5 medium, • 0.51-0.8: on an average sufficient • 0.81-1.00: sufficient • >1.0 more than sufficient
4	Nitrogen (kg/ha)	• Upto 50 very less • 51-100 less • 101-150 good • 151-300 Better

Sl. No.	Soil Test	Classification
		• >300 sufficient
5	Phosphorus (kg/ha)	• Upto 15 very less • 16-30 less • 31-50 medium, • 51-65 on an average sufficient • 66-80 sufficient • >80 more than sufficient
6	Potassium (kg/ha)	• 0 -120 very less • 120-180 less • 181-240 medium • 241-300 average • 301-360 better • >360 more than sufficient

Source: Handbook of Agriculture, Indian Council of Agriculture Research, New Delhi

The following conclusions have been drawn from Table 3.6 and Table 3.7.

- The soil in the study area is acidic to moderately neutral with pH ranging from 6.9 to 7.3 in the study area. The texture of the soil is dominantly silty clay loam in nature.
- The moisture content of the soil samples is found to be low and ranges from 4.6% to 5.3%. This is due to moderate water holding capacity of the soil.
- Organic carbon, a major nutrient for soil fertility, was found in lower proportions in the study area. Organic carbon content is 0.10% in Kachhar Kalan, 0.15% in Kachhar Khura and and 0.16% in Patyora.
- The NPK (data taken from secondary source) content in the soil samples was found to be low to medium which indicates that the soil fertility of the area is low.

From the data above we can infer that the soil of the study area is of low fertility with low Phosphorus and Potassium content, and agricultural activity, if any, would be highly dependent on the addition of external fertilizers. The good content of nitrogen (N) will aid in the growth of leaves.

3.8 CLIMATOLOGY & METEOROLOGY

Meteorology is the key to understand the air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Other factors such as variation in temperature, humidity etc. also plays a direct role in dispersion and dilution of pollutants. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them. This section makes a comparative analysis of the meteorological data of the study area collected by project team in 2017-18. The data used for the purpose are the 30 years average IMD data from 1951 to 1980 taken from Meteorological Station, Kanpur.

3.8.1 IMD METEOROLOGICAL DATA (30 YEARS)

The climate of the region over most of the year is a pronounced continental in character. It is very hot in summers and markedly cold in winters. The winter starts in December when day and night temperatures fall rapidly. January is the coldest month. During cold waves, the minimum temperature may go down to the freezing point of water, and frosts can occur. The temperature drops considerably with the advancement of the monsoon in June. However, the night temperature during this period continues to be high.

Table 3-9: Climate Condition

Parameters	Months	Temperature (°C)	
		Max	Min
Temperature	January	22.7	8.5
	February	26.4	11.3
	March	32.5	16.6
	April	38.3	22.0
	May	41.4	26.5
	June	40.1	28.7
	July	34.3	26.7
	August	32.2	25.9
	September	33.0	24.9
	October	32.7	20.2
	November	29.0	13.2
	December	24.2	8.9
	Average	32.2	19.5
Rainfall	January	21.1	
	February	12.5	
	March	6.2	
	April	4.5	
	May	9.8	
	June	65.4	
	July	229.8	
	August	289.5	
	September	124.4	
	October	60.7	
	November	1.0	
	December	7.7	
	Monthly average	69.4	
Relative Humidity		08.30 hrs	17.30 hrs
	January	79.0	50.0
	February	66.0	38.0

Parameters	Months	Temperature (°C)	
		Max	Min
	March	52.0	29.0
	April	37.0	23.0
	May	37.0	22.0
	June	54.0	39.0
	July	80.0	68.0
	August	87.0	77.0
	September	81.0	68.0
	October	69.0	54.0
	November	65.0	46.0
	December	76.0	50.0

Source: (i) Climatological Table*1951 to 1980*, Indian Meteorological Department, Govt. of India

3.8.1.1 TEMPERATURE

Temperature of the study area is generally high during April to June. The maximum temperature dips during the monsoon months and steadily falls in winter. The minimum temperature is recorded in the month of January and December.

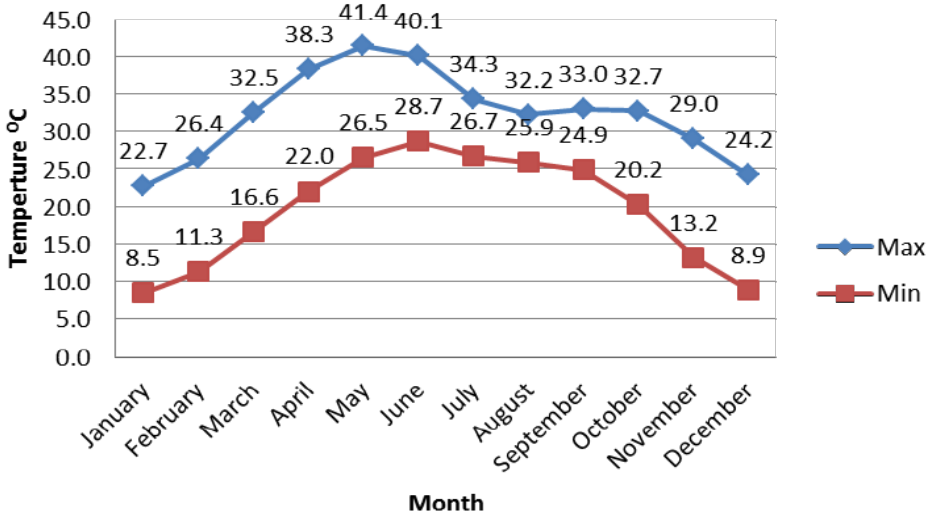


Figure 3.10: Average Maximum and Minimum Temperature (°C) as per IMD

3.8.1.2 RAINFALL

More than 75% of the annual rainfall is received during the months from July to September. The mean rainfall of the area during the monitoring season of March-May is 6.8 mm. The 30-years average monthly rainfall data is furnished in Figure 3.11.

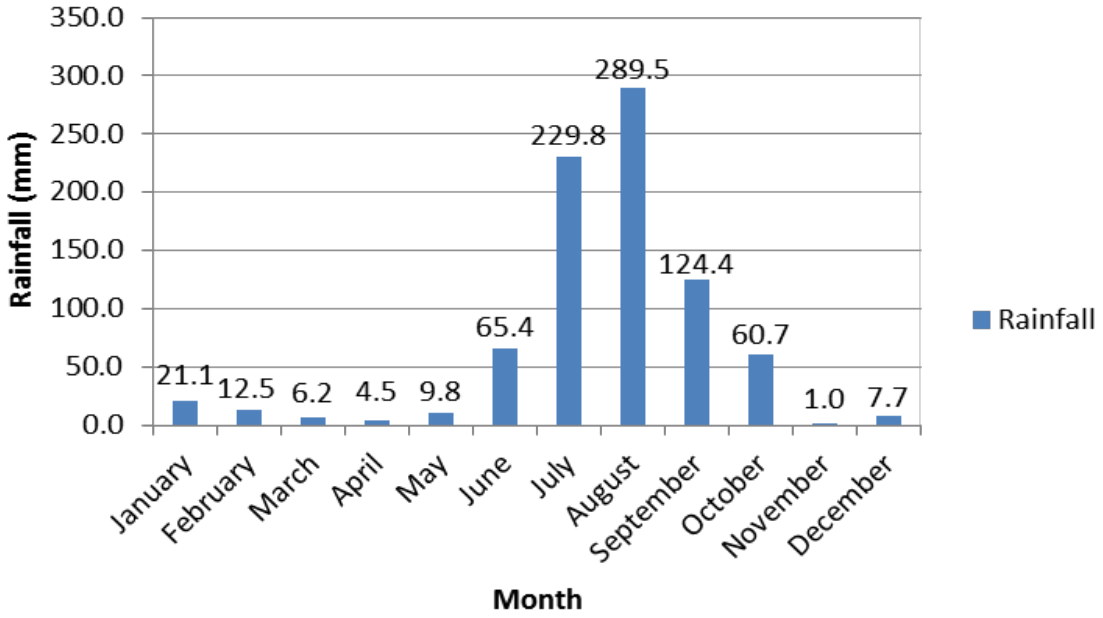


Figure 3.11: Monthly Average Rainfall as per IMD

3.8.1.3 RELATIVE HUMIDITY

The humidity is highest in July, August and September with mean maximum daily relative humidity of 73%. The annual mean relative humidity of 30 years is furnished in Figure 3.12.

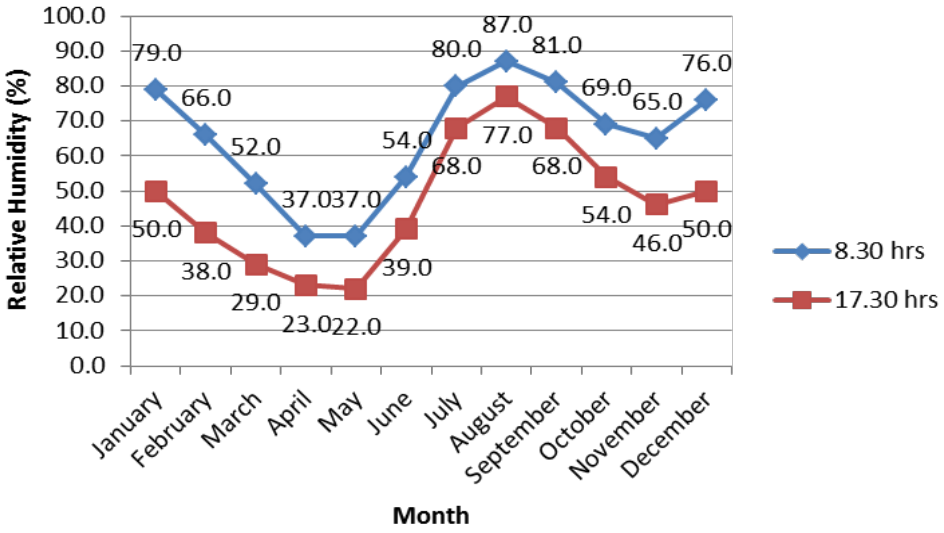
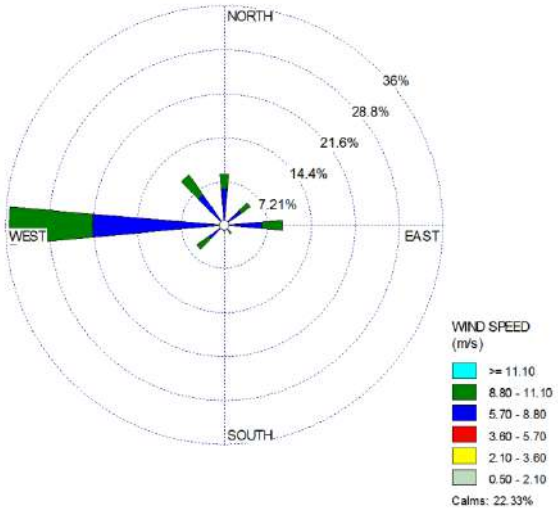


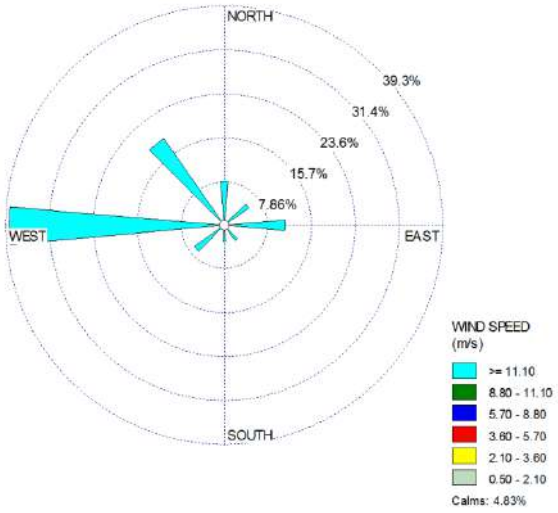
Figure 3.12: Monthly Average Relative Humidity in % as per IMD

3.8.1.4 WIND PATTERN

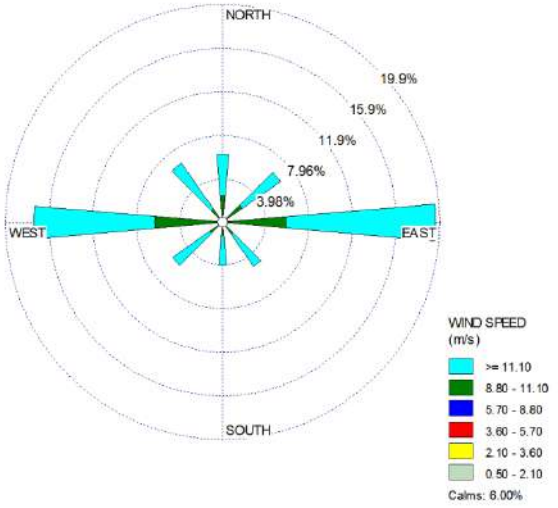
The general predominant wind direction is from west followed by east. Other noticeable wind directions are north-west, north. The average wind speed varies from 5.3 to 13.4 kmph with 13.5% calm. The seasonal wind roses for the entire year is provided in Figure 3.13.



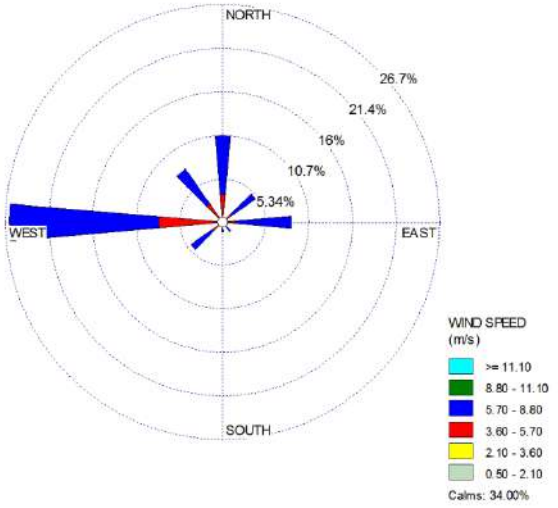
Winter: December - February



Summer: March - May



Monsoon: June - September



Post-Monsoon: October - December

Figure 3.13: Wind Direction & Speed as per IMD

3.8.2 ONSITE METEOROLOGICAL DATA

The data on meteorological parameters in the study area were monitored for the period summer season (March to May, 2018). The data was monitored with an automatic weather monitoring station placed near the proposed mining site. The data collected during winter season are presented in Table 3.10 and detailed data is attached as Annexure 3.1.

Table 3-10: Summary of the Site Specific Meteorological Data

Months	Temperature (°C)			Relative Humidity (%)			Avg. Wind Speed (km/hr)	Average Rainfall (mm)
	Max	Min	Avg.	Max	Min	Avg.		

March	40.00	13.00	25.76	64.97	35.02	50.15	11.29	8.30
April	42.00	19.00	30.43	84.20	33.10	56.59	12.20	7.40
May	45.00	22.00	33.99	64.98	35.03	49.92	12.70	19.80
Average	42.33	18.00	30.06	71.38	34.38	52.22	12.07	11.83

Source: On-site monitoring by Envirotech East Private Limited, Kolkata

The average maximum temperature recorded during the study period was 42.3°C and the minimum average was 18.0°C (March). The average maximum Relative Humidity for the study area was 71.38% while the minimum average was 34.38%. The average wind speed recorded was 12.07 km/hr. Wind rose diagram (Figure 3.14) from the monitored data shows that the predominant wind direction during the study period was mainly West and North West.

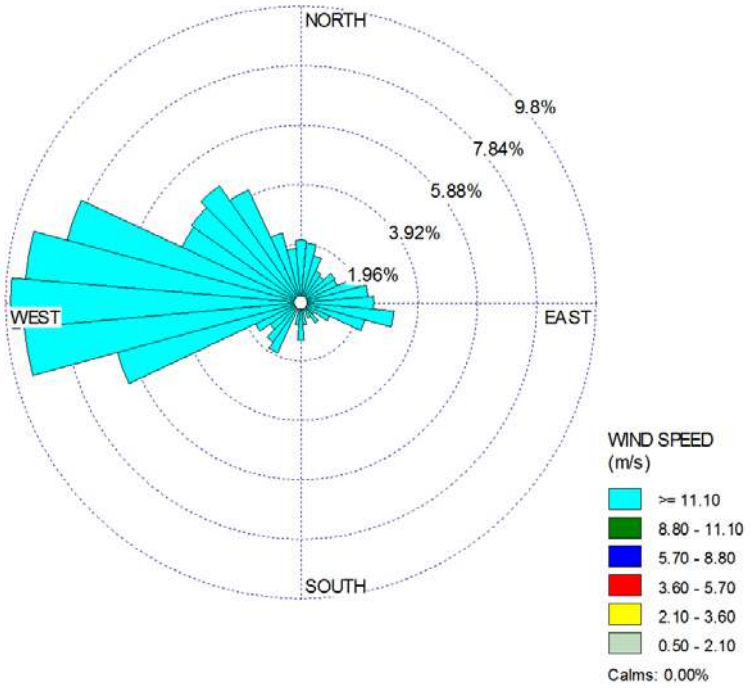


Figure 3.14: Onsite Wind-rose for Summer Season

3.9 AIR ENVIRONMENT

3.9.1 FREQUENCY AND PARAMETER OF SAMPLING

Ambient air quality monitoring was carried out at a frequency of two days per week at each location. The duration of sampling was 24 hourly continuous sampling per day. The baseline data of air was monitored for PM_{10}, $PM_{2.5}$, SO_2, NO_2 and CO. Other than these, the free silica percentage for PM_{10} was also examined.

3.9.2 INSTRUMENTS USED FOR SAMPLING

With a view to collect the samples, Envirotech make calibrated Respirable Dust Samplers (RDS-APM 460 BL) along with Gaseous attachment and Fine Particulate Matter (FPS APM 550) were used. The instruments are well capable of drawing air at a flow rate of 1 to 1.3 m^3/min with very little pressure drop

for RDS and the impactor system of FPS is designed to operate at an air flow rate of 1 m^3/hr. Filter papers (8" x 10" GF for PM10 and 46.2 dia PTFE for PM2.5) were used for the collection of PM10 and PM2.5. SO_2 was collected by drawing air at a flow-rate of 0.5 litres per minute (lpm) through an absorbing solution i.e., Sodium tetrachloromercurate (TCM) (West and Gaeke Method) and NO_2 was collected by drawing air at a flow rate of 0.4 lpm through the mixture of absorbing solutions i.e. sodium hydroxide and sodium arsenite (Jacobs and Hochheiser Method). Carbon Monoxide samples were collected on 8 hourly basis and analyzed by Non Dispersive Infrared Spectroscopy (NDIR).

3.9.3 SAMPLING AND ANALYTICAL TECHNIQUES

The equipment used in air monitoring was equipped with timers, which automatically records the total duration of monitoring for which equipment was in operation. Based on this, total volume of gas sampled was calculated to arrive at concentrations of pollutants monitored. If by any reason, the monitoring could not be carried out for the duration of minimum sixteen hours as per CPCB guidelines, the monitoring was repeated next day to have a more representative sample.

The concentrations of parameters were computed for the total duration of monitoring and for the total gas volume sampled excluding the time lapses due to power failures. The analytical techniques used for the analysis of both particulate and gaseous pollutants are given in Table 3.11.

Table 3-11: Ambient Air Quality Monitoring Techniques

Parameter	Analytical Technique	Technical Protocol
PM_{10}	Respirable Dust Sampler (Gravimetric method)	IS-5182 (Part 23)
$PM_{2.5}$	Fine Particulate Sampler (Cyclonic method)	Measurement of Ambient Air Pollutants, Volume-I
SO_2	West and Gaeke	IS-5182 (Part 2)
NO_2	Jacob and Hochheiser	IS-5182 (Part 6)
CO	Non Dispersive Infrared Spectroscopy (NDIR)	
% Free Silica	Gravimetric-method	IS 1760 (Part-6) 2001

3.9.4 SELECTION OF SAMPLING LOCATIONS

The selection of monitoring station has been done on the basis of the following considerations:

- Meteorological conditions (wind direction and wind speed);
- Representativeness of regional background air quality for obtaining baseline status;
- Representative of likely affected area;
- Topography of the study area;
- Accessibility and availability of the infrastructure.

Keeping in view the above mentioned points ten ambient air quality monitoring locations were selected. The location of human habitation and other sensitive areas within the study area were also considered for selection of ambient air quality monitoring locations. The Ambient Air Quality Monitoring locations have been shown in Figure 3.15. The relative direction and distance of these locations with respect to the plant site is given in Table 3.12.

Table 3-12: Ambient Air Quality Monitoring Stations

Sl. No.	Location	Station Code	Distance from mine area (km)*	Direction (w.r.t. mine area) *
1	Kachhar Kalan	AAQ1	1.4	S
2	Moihatal	AAQ2	2.5	WSW
3	Dabsaura	AAQ3	1.6	WNW
4	Mahna	AAQ4	1.5	NE

**- Distance and direction are in respect of mining block and on the basis of aerial distance*

Source: Envirotech East Private Limited, Kolkata

3.9.5 ANALYSIS OF BASELINE CONCENTRATION

The analysis of air samples was carried out as per the method as described in the applicable standard codes. The result of the analysis has been summarized and given in Table 3.13 to 3.19.

Table 3-13: Particulate Matter (PM_{10}) in µg/m^3

Location	Min	Max	STDEV	98P	Mean	NAAQS
Kachhar Kalan	48.0	51.8	1.0	51.6	50.0	100
Moihatal	50.6	54.0	0.9	53.9	52.6	100
Dabsaura	44.4	58.1	4.3	57.9	51.1	100
Mahna	48.3	59.6	3.6	59.5	53.6	100

Source: Envirotech East Private Limited, Kolkata

Table 3-14: Particulate Matter ($PM_{2.5}$) in µg/m^3

Location	Min	Max	STDEV	98P	Mean	NAAQS
Kachhar Kalan	16.3	22.6	1.4	22.2	20.0	60
Moihatal	17.7	24.5	1.5	23.9	21.5	60
Dabsaura	21.6	25.1	1.0	25.1	23.4	60
Mahna	20.6	25.7	1.6	25.6	22.9	60

Source: Envirotech East Private Limited, Kolkata

Table 3-15: Sulphur Dioxide (SO_2) in µg/m^3

Location	Min	Max	STDEV	98P	Mean	NAAQS
Kachhar Kalan	5.4	8.5	0.8	8.4	7.6	80
Moihatal	5.7	8.9	1.0	8.9	7.1	80
Dabsaura	9.0	12.5	1.0	12.5	10.8	80
Mahna	11.7	13.8	0.7	13.7	12.6	80

Source: Envirotech East Private Limited, Kolkata

Table 3-16: Oxides of Nitrogen (NO_2) in µg/m^3

Location	Min	Max	STDEV	98P	Mean	NAAQS
Kachhar Kalan	8.1	11.0	0.9	11.0	9.6	80
Moihatal	5.7	12.0	1.8	11.7	7.7	80

Location	Min	Max	STDEV	98P	Mean	NAAQS
Dabsaura	7.9	11.4	1.0	11.4	9.7	80
Mahna	10.1	12.6	0.8	12.6	11.3	80

Source: Envirotech East Private Limited, Kolkata

Table 3-17: Carbon Monoxide (CO) in mg/m^3

Location	Min	Max	STDEV	98P	Mean	NAAQS
Kachhar Kalan	0.37	0.42	0.01	0.42	0.40	2
Moihatal	0.34	0.44	0.03	0.44	0.41	2
Dabsaura	0.48	0.59	0.03	0.58	0.53	2
Mahna	0.47	0.55	0.02	0.55	0.52	2

Source: Envirotech East Private Limited, Kolkata

Table 3-18: Silica in PM10 in %

Location	Min	Max	STDEV	98P	Mean
Kachhar Kalan	0.32	0.37	0.01	0.37	0.35
Moihatal	0.32	0.37	0.01	0.37	0.35
Dabsaura	0.36	0.41	0.01	0.41	0.39
Mahna	0.40	0.43	0.01	0.43	0.41

Source: Envirotech East Private Limited, Kolkata

3.9.6 OVERALL AMBIENT AIR QUALITY

Detail survey results of the study period are analyzed and the 98th percentile, average, maximum and minimum values have been computed from the observed analyzed/raw data for all the AAQ monitoring stations. The summary of these results for PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO and % Silica for each location are presented in Table 3.19.

Table 3-19: Consolidated Values of AAQ (98 percentile)

Location	Distance (km)	Direction	µg/m^3				mg/m^3	%	µg/m3
			PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Silica	
Kachhar Kalan	1.4	S	51.6	22.2	8.4	11.0	0.42	0.37	0.19
Moihatal	2.5	WSW	53.9	23.9	8.9	11.7	0.44	0.37	0.20
Dabsaura	1.6	WNW	57.9	25.1	12.5	11.4	0.58	0.41	0.24
Mahna	1.5	NE	59.5	25.6	13.7	12.6	0.55	0.43	0.26
Standard Concentration (24 hrs)**									
Residential, Rural & Other Areas			100	60	80	80	02	-	
Sensitive Areas			100	60	80	80	02		
NIOSH									50

Source: (i) Envirotech East Private Limited, Kolkata (ii) Gazette of India Notification, dated 18th Nov, 2009

Annual Arithmetic Means of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals, ** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable shall be complied with 98% of the time in a year. 2% of the time they may exceed the limits but not on two consecutive days of monitoring, * For CO 8 hourly standard is being considered*

Figure 3.16: Particulate Matter (PM10) in µg/m³ (98P)

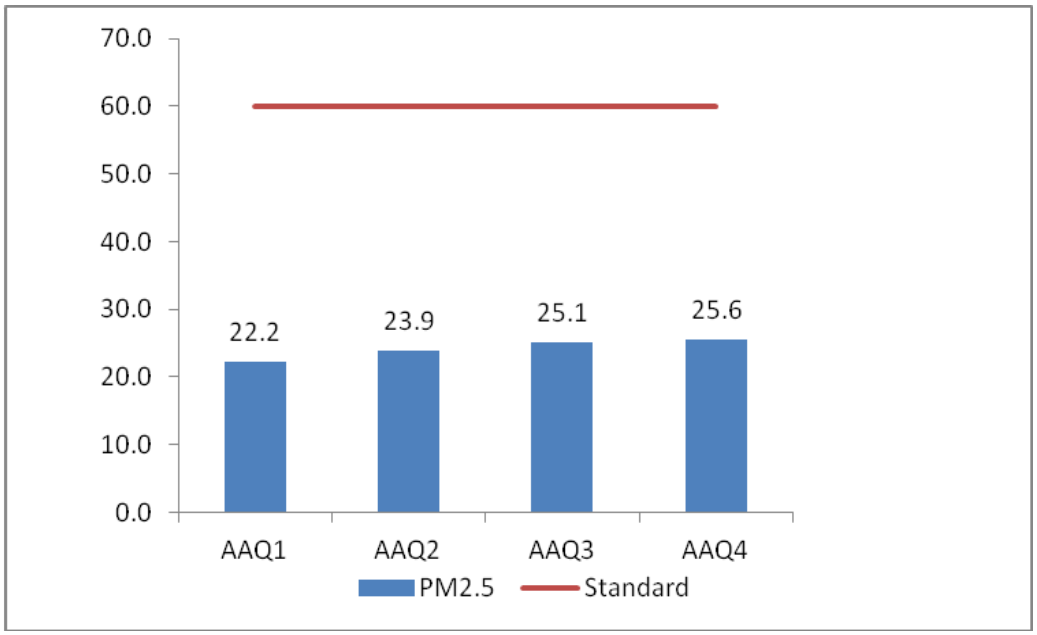


Figure 3.17: Particulate Matter (PM2.5) in µg/m³ (98P)

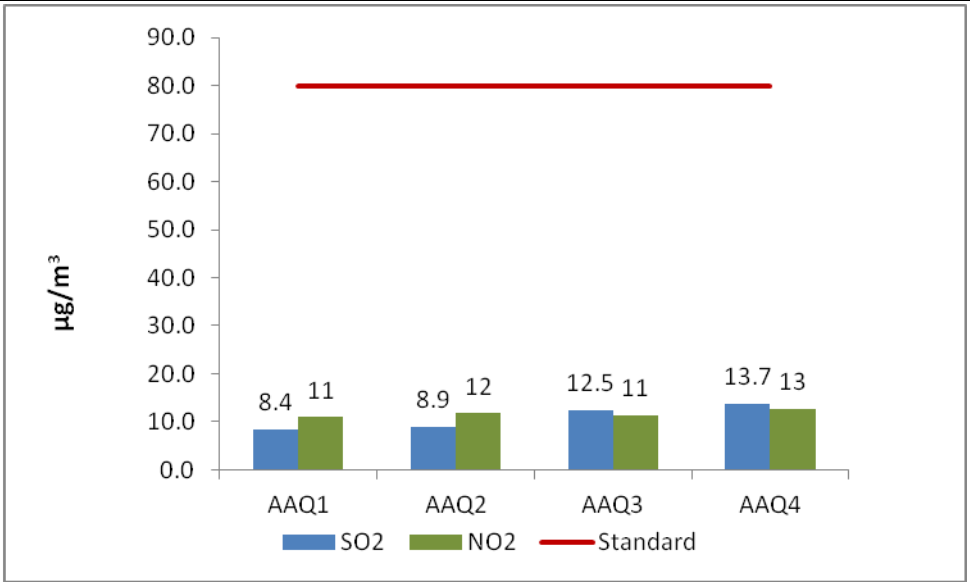


Figure 3.18: Particulate Matter (SO_2 and NO_2) in µg/m³ (98P)

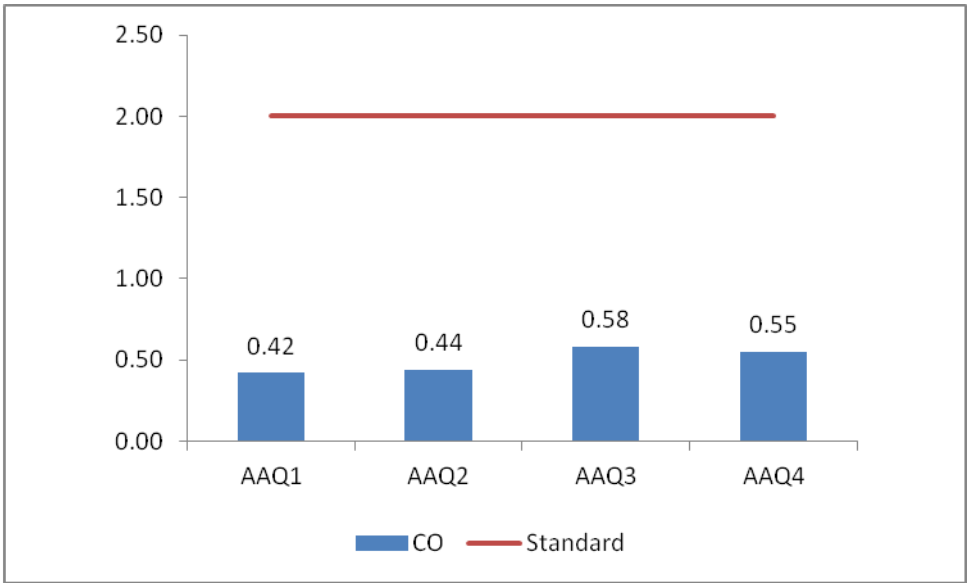


Figure 3.19: Particulate Matter (CO) in mg/m³ (98P)

The following conclusion has been drawn from Table 3.13 to 3.19 and Figure 3.16 to 3.19:

- Particulate Matter: The 98percentile concentration of PM_{10} and $PM_{2.5}$ varies from 51.6 µg/m³ (AAQ1) to 59.5 µg/m³ (AAQ4) and 22.2 µg/m³ (AAQ1) to 25.6 µg/m³ (AAQ4) respectively. The results of the monitored data indicate that concentration of Particulate Matter (PM_{10}) is well within prescribed limit of 100 µg/m³. The values of PM_{10} obtained at all the four locations are somewhat similar. The $PM_{2.5}$ values are also well within the prescribed limit of 60 µg/m³.

  The percentage of free silica (polymorphs of quartz, cristobalite, and tridymite) as found in the PM_{10} samples are found as 0.37 % (AAQ1&2), 0.41 % (AAQ3), 0.43 % (AAQ4). Inhalation of respirable crystalline silica (RCS) is a cause of one of the oldest known occupational diseases, silicosis.

Exposure to airborne respirable silica can also cause lung cancer and is possibly linked to a disease known as chronic obstructive pulmonary disease (COPD). Crystalline silica is abundant in the earth's crust and is found in many products and materials. There are efforts to reduce the occupational exposure limits (OELs) for exposure to RCS in several countries, thus, many national institutes, companies, and organizations are concerned about the precision and reliability of respirable silica measurements.

NIOSH Recommended exposure limit for occupational exposure is 0.05 mg/m^3 as a TWA for up to 10-h work shift as respirable free silica. At each station, the values are much less.

- The World Health Organization has ranked particulate matter as the 13th leading cause of mortality worldwide. PM is a portion of air pollution that is made up of extremely small particles and liquid droplets containing acids, organic chemicals, metals, and soil or dust particles. Populations subjected to long-term exposure to particulate matter have a significantly higher cardiovascular incident and mortality rate. Short-term acute exposures subtly increase the rate of cardiovascular events within days of a pollution spike. Particulate matter also forms a film on plant leaves reducing sunlight and subsequently interfering with photosynthesis and plant growth. Acidic and alkaline materials may cause leaf surface injury while other materials may be taken up across the cuticle. The regular deposition of particulate matter on tree leaves increases the concentration of particulate matter at the place.

- Gaseous Pollutant (SO_2, NO_2 &CO): The major source of SO_2 and NO_2 emission are traffic density, use of oil and coal as fuel for cooking and other domestic purpose etc. The maximum and minimum SO_2 concentrations were recorded as 13.7 µg/m^3 at AAQ4 and 8.4 µg/m^3 at AAQ1. Whereas, the minimum concentration of 11.0 µg/m^3 for NO_2 was recorded at AAQ1 and maximum concentration of 12.6 µg/m^3 was observed at AAQ4. The concentration of SO_2 and NO_2 was found well within prescribed NAAQ standards.
- The lowest level of CO was observed at AAQ1 (0.42 mg/m^3) while the highest value (0.58 mg/m^3) was observed at AAQ^3. These levels are found to be well within the NAAQ standard of 2.0 mg/m^3 for residential and industrial areas.
- PM_{10} are particles less than 10 micron in size and are mainly caused by traffic on un-metalled roads, dust from mining activities and smoke from factories. Fine particles are caused by all types of combustion, including motor vehicles, residential wood burning, forest fires, agricultural burning, etc. Sulphur dioxide gas is an inorganic gaseous pollutant. Sulphur dioxide emissions occur wherever combustion of any fuel containing sulphur takes place. Sulphur dioxide in atmosphere is significant because of its toxicity; Sulphur dioxide is capable of producing illness and lung injury. The important sources of Nitrogen dioxide are from vehicular movement.

In the absence of any permanent pollution source in the study area, the overall ambient air quality was found to be satisfactory with all the parameters well within the standard limits as stipulated by CPCB. The only source of present pollution found in the area was from heavy vehicle movements on nearest road and burning of domestic fuel.

3.10 NOISE LEVEL MEASUREMENT

3.10.1 FREQUENCY & PARAMETERS OF SAMPLING

Noise levels were recorded at an interval of 60 minutes during the day and night times to compute the day equivalent, night equivalent and day-night equivalent level. The noise level was monitored once during the study period at each monitoring location. The noise level is recorded in dB(A). The important parameters measured are Leq, Lday, and Lnight.

Leq: Noise monitoring equipments provide the facility for measurement of Leq directly. However, Leq can also be calculated using the following equation:

$$Leq\ (hrly) = L50 + (L10 - L90)^2/60$$

Where,

L10 (Ten Percentile Exceeding Level) is the level of sound, which exceeds 10% of the total time of measurement

L90 (Ninety Percentile Exceeding Level) is the level of sound, which exceeds 90% of the total time of measurement.

Leq: This represents Leq of whole day including night. Leq is calculated as logarithmic average using the hourly Leq for whole 24 hrs in a day.

Lday: This represents Leq of day-time. Lday is calculated as logarithmic average using the hourly Leq's for day time hours from 6.00 A.M to 10.00 P.M

Lnight: This represents Leq of night-time. Lnight is calculated as logarithmic average using the hourly Leq's for night-time hours from 10.00 PM to 6.00 A.M.

3.10.2 INSTRUMENTS USED FOR SAMPLING

Envirotech make automatic sound level meter (SLM 100) was used for measuring the noise levels. This instrument measures sound pressure level (SPL), maximum sound pressure level (max) and equivalent continuous noise level (Leq).

3.10.3 SAMPLING AND ANALYTICAL TECHNIQUES

The noise level was recorded continuous for 24 hours at an interval of 1 hour. The hourly average computed from the noise reading taken at every 5 minutes interval. The monitoring was carried out once during the study period. The important parameters to be measured are Leq, Lday, and Lnight.

3.10.4 SELECTION OF MONITORING LOCATIONS

Assessment of ambient noise levels is an important parameter in preparation of impact assessment report. Noise levels are more annoying in the night time particularly in the residential area. The environmental impact of noise can have several effects varying from annoyance to hearing loss depending on loudness of noise levels. The monitoring for noise levels were done in 4 locations keeping considering the population and traffic of the area. The locations are depicted in Table 3.20 and Figure 3.20.

Table 3-20: Noise Level Monitoring Locations

Code	Location	Distance (km)*	Direction (w.r.t mine area)*
N1	Kachhar Kalan	1.4	S
N2	Moihatal	2.5	WSW
N3	Dabsaura	1.6	WNW
N4	Mahna	1.5	NE

**- Distance and direction are in respect of mining block and on the basis of aerial distance*
Source: Envirotech East Private Limited, Kolkata

3.10.5 ANALYSIS OF BASELINE CONCENTRATION

From Table 3.21, it is observed that the present noise level is not exceeding the standard level of CPCB norms. The Leq was recorded in the range of 48.8 to 52.9 dB(A) during daytime and 38.5 to 43.3 dB(A) during night time.

Table 3-21: Ambient Noise Levels [dB(A)]

Location	Distance (km)	Direction	Day			Night		
			L Max	L Min	L eq	L Max	L Min	L eq
Kachhar Kalan	1.4	S	56.8	42.9	52.9	48.3	36.6	43.3
Moihatal	2.5	WSW	51.4	43.2	48.8	44.9	36.5	41.0
Dabsaura	1.6	WNW	53.8	45.0	51.1	46.8	37.3	42.6
Mahna	1.5	NE	52.3	40.1	49.3	43.2	32.4	38.5

Ambiant Noise Standards (CPCB)			
Area Code	Category of Area	Limits in dB(A), Leq	
		Day time (06:00 hrs to 20:00 hrs)	Night time (20:00 hrs to 06:00 hrs)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone*	50	40

** Silence zone is defined as an area up to 100 meters around such premises as hospitals, educational institutions and courts. The silence zones are to be declared by the competent authority*
Source: Envirotech East Private Limited, Kolkata

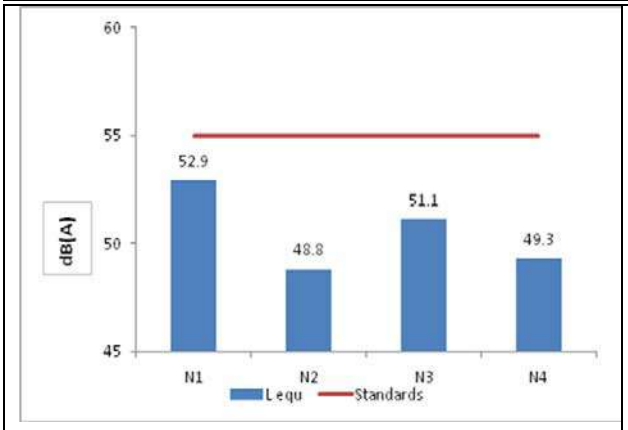


Fig:3.21: Noise levels in the Day time

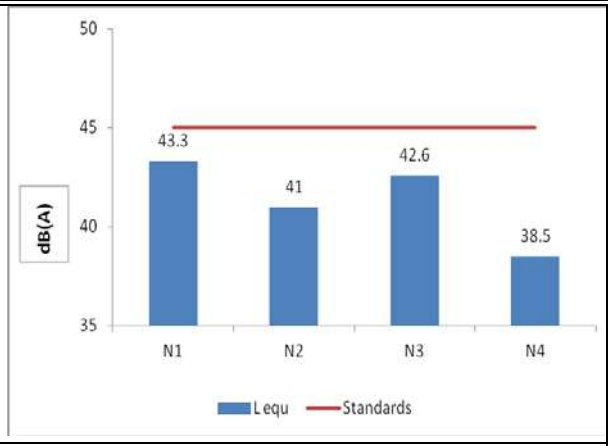


Fig:3.22: Noise levels in the Night time

3.11 CLASSIFIED TRAFFIC VOLUME COUNT

Traffic Volume count was done at 4 locations marked on the map in Figure 3.23 and given in Table 3.22. The monitoring was conducted in March 2018. 24 hours classified Volume Count was done for heavy motor vehicles (HMV), light motor vehicles (LMV) and two/three wheelers. The traffic volume count was done as per IRC code and 2 staffs were deployed for single direction vehicular movement. The total numbers of vehicles per hour under the three categories were determined.

Table 3-22: Traffic Volume in PCU per day

Location	Distance(km)	Direction	HMV		LMV		2/3Whellers		Total
			No.	PCU	No.	PCU	No.	PCU	
T1	1.8	WSW	0	0	12	12	30	15	27
T2	4.5	WSW	41	123	46	46	190	95	264
T3	7.9	WSW	47	141	53	53	234	117	311
T4	9.6	WSW	59	177	69	69	290	145	391

Source: Envirotech East Private Limited, Kolkata

From the above table it can be observed that the traffic density in the roads to be used for transportation of sand is low and will be able to absorb the incremental traffic load due to the project.

3.12 WATER ENVIRONMENT

3.12.1 HYDROGEOLOGY

A perusal of table and depth to water level contour map for the period May 2012 reveals that water level varies from 4.08 mbgl as seen at Kharela to 29.32 mbgl in Jalalpur. Almost all the places of the district show DWL between 4.12 to 17.50 mbgl. A perusal of table and depth to water level contour map for the period November 2012 reveals water level has become shallower and varies from 2.22 at Kapsa (Maudaha block) to 28.82 mbgl in the Jalalpur 90% of the area lies in 5 to 10 mbgl water level.
Water table fluctuates in response to recharge to the aquifer and with drawl from the aquifer. The quantum of fluctuation is direct function of the above. Recharge takes place mainly during rainy season.

The minimum depth to water level in area is expected sometime at the close of monsoon or in the middle of monsoon period depending upon the intensity and duration of rainfall as well as soil characteristics and maximum depth to water level is expected to the rain fall.

Annual seasoned fluctuation of water level has been determined from the pre monsoon (May, 2012) and post monsoon (Nov., 2012) water level data of ground water monitoring wells the fluctuation varies from min 0.02 mbgl at Kunehta – and max 4.75 at Lalpura.

A perusal of the table shows that there is falling trend at 12 places and rising trend at four places the range minimum decline 19 cm/year at Kurela and maximum decline 2.88 mts at Dhagwan almost 66% of well are showing decline in the rang 18cm to 2.88 mts. However 33% of wells show the rising of water leve,l the minimum and maximum rise being 0.04 and 0.92 m at Khanna and Kapsa area.

A perusal of the table shows that at 8 places show the falling trend at the rate of 013 m minimum and 3.50 m maximum at Jalalpur area. The range of decline varies from 0.13cm/year at Kapsa and 3.52 m/year at Jalalpur area. However increasing trend is seen at 0.11 m/year at Kunehta and 0.53 m/year as Dhagwan area of district. The hydrogeology of the district is shown in Figure 3.24.

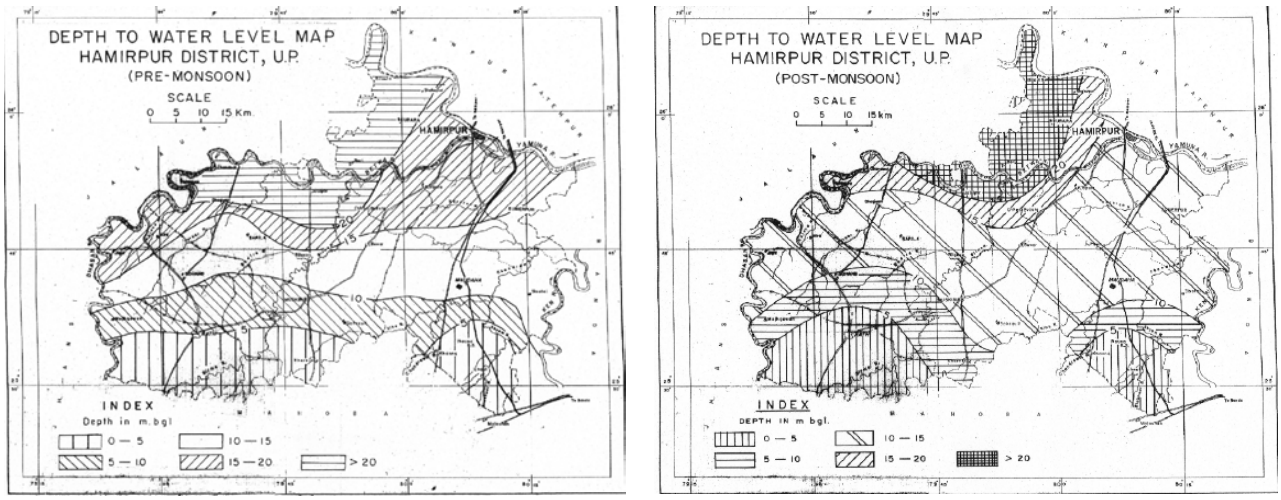


Figure 3.24: Depth to Water Level map of Hamirpur District

3.13 WATER QUALITY

3.13.1.1 Frequency & Parameters

Water samples were collected once during the study period and analyzed for following physico-chemical and biological parameters.

Physico-chemical Parameters - Turbidity

pH, Conductivity (at 25 C), Total Dissolve Solids, Alkalinity as $CaCO_3$, Total Hardness as $CaCO_3$, Calcium as Ca Magnesium as Mg, Sodium, Potassium, Chloride as Cl, Sulphate as SO_4, Nitrate as NO_3, Fluoride as F, DO, COD, Oil & Grease, Arsenic, Iron etc.

- Biological parameters - BOD

3.13.1.2 Method and Water Collection Techniques

The methodology for sample collection and preservation techniques was followed as per the APHA standards/SOP given in Table 3.23.

Table 3-23: Techniques for Data Collection-Water

Sl. No.	Parameter	Test Method
1.	pH at 25°C	APHA 22nd edition, 4500H^+ B:2012
2.	Turbidity	APHA 22nd edition, 2130 B:2012
3.	Electrical Conductivity	APHA 22nd edition, 2510 B:2012
4.	TDS	APHA 22nd edition, 2540 B:2012
5.	Total Hardness	APHA 22nd edition, 2340 C:2012
6.	Calcium (Ca)	APHA 22nd edition, 3500 Ca B:2012
7.	Magnesium (Mg)	APHA 22nd edition, 3500 Mg B:2012
8.	Sodium	APHA 22nd edition, 3500 Na B:2012
9.	Potassium	APHA 22nd edition, 3500 K- B:2012
10.	Alkalinity as $CaCO_3$	IS3025-Part 23, 1986 Reaffirmed 2009
11.	Fluoride	APHA 22nd edition, 4500 F- D:2012
12.	Chloride	APHA 22nd edition, 4500 Cl- B:2012
13.	Sulphate	APHA 22nd edition, 4500 SO_4^--E:2012
14.	Iron	APHA 22nd edition, 3500 Fe- B:2012
15.	Nitrate	IS : 3025 (Part-34)
16.	Arsenic	IS : 3025 (Part-37)
17.	BOD (3 days at 27°C)	IS3025- Part 44, 1993 Reaffirmed 2003
18.	COD	IS3025- Part 58, 2006
19.	DO	IS3025- Part 38, 1989 Reaffirmed 2003

3.13.1.3Selection of Sampling Locations

The samples were taken for surface water quality from major surface water bodies and underground water samples were taken from the hand-pumps of the adjoining settlements. A total of 5 samples were taken (3 for ground water & 2 for surface water). The water quality sampling locations are shown in Figure 3.25 and described in Table 3.24.

Table 3-24: Water Sampling Locations

Location Code	Name of Location	Source	Distance (km)*	Direction w.r.t mine area*
SW1	Moihatal	Yamuna River	3.75	WSW
SW2	Mahna	Yamuna River	1	NE
GW1	Kachhar Kalan	Hand Pump	1.5	S
GW2	Moihatal	Hand Pump	2.5	SW
GW3	Dabsaura	Hand Pump	1.6	NW

*- Distance and direction are in respect of nearest mining block and on the basis of aerial distance
Source: Envirotech East Private Limited, Kolkata

3.13.1.4 Analysis of Surface Water Quality

The surface water samples were collected from Yamuna river at two locations. Surface water qualities represent the aquatic life of an area. The parameters of surface water were compared with Designated Best Use of Water of CPCB as shown in table below and conclusions for each sample were drawn accordingly.

Table 3-25: Designated Best Use of Water as per CPCB

Designated Best Use	Class of Water	Criteria
Drinking water source without conventional treatment but after disinfection	A	Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20°C 2mg/l or less
Outdoor bathing (Organised)	B	Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Propagation of Wild life and Fisheries	D	pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	pH between 6.0 to 8.5 Electrical Conductivity at 25°C micro mhos/cm Max.2250 Sodium adsorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

Source: Central Pollution Control Board (CPCB)

The surface water quality as analyzed and the parameter wise results are given in Table 3.26.

Table 3-26: Surface Water Quality in Study Area

Parameters	Unit	SW1	SW2
Turbidity	NTU	30	27
pH	--	7.3	7.2
Conductivity (at 25 C)	µS/cm	721	489
Total Dissolve Solids	mg/l	432.0	293.0
Alkalinity as $CaCO_3$	mg/l	166.5	120.2
Total Hardness as $CaCO_3$	mg/l	211.0	135.6
Calcium as Ca	mg/l	46.80	30.10
Magnesium as Mg	mg/l	22.90	14.70

Parameters	Unit	SW1	SW2
Sodium	mg/l	46.7	31.6
Potassium	mg/l	6	5
Chloride as Cl	mg/l	93.3	65.9
Sulphate as SO_4	mg/l	45.4	21.8
Nitrate as NO_3	mg/l	2.7	1.4
Fluoride as F	mg/l	0.38	0.29
DO	mg/l	5.3	4.5
BOD	mg/l	1.5	2
COD	mg/l	13.3	13.8
Oil & Grease	mg/l	<5	<5
Arsenic	mg/l	BDL (DL - 0.005)	BDL (DL - 0.005)
Iron	mg/l	1.15	1.14

BDL: Below detection limit; DL: Detection Limit;
Source: Envirotech East Private Limited, Kolkata

The guidelines by CPCB are set using few parameters in such a way that the best use of that particular quality of water for human utilization can be known. The parameters mainly include pH, Dissolved Oxygen, Biological Oxygen Demand and Total Coliforms.

The pH of the surficial waters are 7.3 (SW1) and 7.2 (SW2) which indicates a slightly alkaline nature. In both the samples, the DO exceeds 4.5 mg/l. Higher DO signifies good quality waters and healthy environment for aquatic life. The BOD concentration is 1.5 mg/l (SW1) and 2.0 mg/l (SW2) signifying less pollution in the waters. Higher concentration of harmful bacteria and other microorganisms in polluted water consumes the dissolved oxygen and thus the BOD increases. Total coliform in the samples are within 750 MPN/100ml. Total coliforms include bacteria that are found in water that has been influenced by surface water and in human or animal waste.

The overall class of water for individual samples comes as "C" which signifies that water of Yamuna River can be used as a drinking water source after conventional treatment and disinfection.

3.13.1.5Analysis of Ground Water Quality

The physico-chemical characteristics of groundwater quality are depicted in Table 3.27.

Table 3-27: Ground Water Quality in Study Area

Parameters	Unit	GW1	GW2	GW3	IS 10500:2012	
					Acceptable limit	Permissible limit
pH	--	7.3	7.1	7.4	6.5-8.5	No Relaxation
Conductivity	µS/cm	685	852	737	$	$
Total Dissolve Solids	mg/l	425	526	459	500	2000
Alkalinity as $CaCO_3$	mg/l	179.0	204.0	175.3	200	600
Total Hardness as $CaCO_3$	mg/l	201.9	253.3	228.2	300	600
Calcium as Ca	mg/l	47.6	54.5	51.7	75	200

Parameters	Unit	GW1	GW2	GW3	IS 10500:2012	
					Acceptable limit	Permissible limit
Magnesium as Mg	mg/l	20.2	28.5	24.1	30	100
Sodium	mg/l	37	54	43	$	$
Potassium	mg/l	7	14	11	$	$
Chloride as Cl	mg/l	96.0	124.0	107.0	250	1000
Sulphate as SO_4	mg/l	37.0	46.0	41.0	200	400
Nitrate as NO_3	mg/l	0.6	1.1	0.5	45	No Relaxation
Flouride as F	mg/l	0.09	0.14	0.13	1.00	1.5
Arsenic	mg/l	BDL	BDL	BDL	0.01	0.05
Iron	mg/l	0.1	0.18	0.13	0.3	No Relaxation

BDL: Below detection limit; DL: Detection Limit; $: Not Specified
Source: Envirotech East Private Limited, Kolkata

It is observed from Table 3.27 that:

- The analysis results indicate that the pH of the samples ranges in between 7.1 to 7.4 which are well within the specified standard of 6.5 to 8.5.
- Total hardness was observed to be ranging from 201.9 to 253.3 mg/l. The maximum hardness (253.3 mg/l) was recorded at GW2 (Moihatal) and the minimum (201.9 mg/l) was recorded at GW1 (Kachhar Kalan). The hardness was found to be within the acceptable limit of 300 mg/l as per IS 10500:2012.
- Chlorides were found to be in the range of 96.0mg/l at GW1 to 124.0 mg/l at GW2 which is well within the specified standard of 250 mg/l, as per IS 10500:2012.
- Sulphate was found to be in the range of 37.0 mg/l to 46.0 mg/l. The maximum value observed at GW2 whereas the minimum value observed at GW1, which is well within the specified standard of 200 mg/l as per IS 10500:2012.
- It can be concluded that the ground water quality does not indicate any industrial contamination and meets the standards of IS 10050:2012 and therefore can be used for drinking purposes.

3.14 ECOLOGICAL ENVIRONMENT

3.14.1 FOREST IN THE STUDY AREA

The study area shows presence of two reserve forest. Minimum distance of 14.4 km (WNW) of Manjhupur Block RF and maximum distance of 14. km (WNW of Chandupur Block RF (Table 3.28).

Table 3-28: **Notified Forest in the Study Area**

Sl. No.	Features	Distance (km)*	Direction*
Forests			

Sl. No.	Features	Distance (km)*	Direction*
1	Badanpur R.F	14.9	WNW
2	Manjhupur Block R.F	14.4	WNW

**- Distance and direction are in respect of nearest mining block and on the basis of aerial distance*

3.14.2 FLORAL & FAUNAL STUDY & METHOD

A detailed biological study of the study area i.e. 10 km radius of the proposed project has been carried out to identify the composition of flora and fauna. Phytosociological study was carried out for assessment of vegetation for density, diversity, frequency and relative abundance. For fauna, random sites were selected for faunal identification. For both the parameters, data from district forest department was obtained.

3.14.3 FLORA

The detailed phytosociological study has been attached as Annex VIII. The detailed list of trees which was commonly found in the study and cross-checked with the secondary list available at the Forest Department is given in Table 3.29 - 3.31.

Table 3-29: List of Trees Identified

Sl. No.	Common Names	Scientific Names
1	Babool	*Acacia arabica*
2	Khair	*Acacia catechu*
3	Babool	*Acacia nilotica*
4	Haldu	*Adina cordifolia*
5	Bel	*Aegle marmelos*
6	Anjan	*Ailanthus excelsa*
7	Siris	*Albizzia sp.*
8	kargai	*Anogeissus pendula*
9	Daun	*Anopeetsus latifolia*
10	Parasidh	*Bardwidkia binata*
11	Kharpur	*Baruga pinnata*
12	Mahua	*Basia latifolia*
13	Kachnar	*Bauhinia roxburrghiana*
14	Salai	*Boswelia serrata*
15	Plas	*Butea monosperma*
16	Amalta	*Cassia fistula*
17	Amlta	*Cassia tora*
18	Bharuhi	*Chloroxylon swietenia*
19	Shisam	*Dalbergia sissoo*
20	Kala shisham	*Delbergia latifolia*
21	Karanj	*Derris indica*
22	Tendu	*Dyosphyros tomentosa*

Sl. No.	Common Names	Scientific Names
23	Anal	*Emblica officinalis*
24	Safeda	*Eucalyptus hybrid*
25	Bargad	*Ficus bengalensis*
26	Pipal	*Ficus religiosa*
27	Khamur	*Gemelina arborea*
28	Dhiman	*Grewia sp.*
29	Haldu	*Haldina cordifolia*
30	Koraya	*Holarrhena antidysentica*
31	Kanju	*Holoptelea intregrifolia*
32	Bhurkul	*Hymenddictyon oxcalsum*
33	Sidha	*Lagerstromea parviflora*
34	Jhingan	*Lannea coromondelica*
35	Mahua	*Madhuca longifolia*

Source: (i) Primary survey by Greencindia Team (ii) Interaction with local people

Table 3-30: List of Shrubs & Herbs Identified

Sl. No.	Local Name	Scientific Name
1	Vasuka	*Adhatoda vasica*
2	Rambara	*Agave Americana*
3	Satawar	*Asperagus raecemosus*
4	Boganbelia	*Bougainvillea sp*
5	Madar	*Calotropis procera*
6	Vehaya	*Ipomia sp*
7	Lantana	*Lantana camara*
8	Harsingar	*Nyctanths arbortristis*
9	Kantkarica	*Solenum indicum*
10	Whiteweed	*Ageratum sp*
11	Castor oil plant	*Ricinus communis*
12	Sleeping Beauty	*Oxalis corniculata*
13	Sarpakshi	*Xanthium strumerium*
14	Ber	*Zizipus zylopyra*
15	Ber	*Z. numularia*
16	Indian caper	*Capparis zeylanica*
17	Marijuana	*Virginea indica*

Source: (i) Primary survey by Greencindia Team (ii) Interaction with local people

Table 3-31: List of Shrubs & Herbs Identified

Sl. No.	Local Name	Scientific Name
1	Kans	*Sacchrum spontaneum*
2	Kuru-	*Chrysopogon gryllus*
3	Churab-tussock grass	*Heteropogon contortus*

4	Sheda grass	*Dichanthium annulatum*
5	Doob grass	*Cynodon dactylon*
6	Coco-grass	*Cyprus rotendus*
7	Bhulbhusia	*Ergrostis tenella*
8	Munj	*Sacchrum munja*
9	White grass	*Sehima nervosum*
10	Pila Baans	*Bambusa valgaris*
11	Dehati Baans	*Bambusa balcooa*
12	Bans	*Dendrocalamus strictus*
13	Dehati Baans	*Dendrocalamus longispathus*

3.14.4 FAUNA

This section describes the terrestrial fauna including domestic animals. The description is based on the field investigation, reports of Forest Department and queries with local inhabitants. Although the Forest department records the presence of few Schedule I species, no such records could be established during field visit or during interaction with local people.

No significant faunal group was observed during the study period. As reported by local inhabitants, the faunal groups are mostly restricted towards the forested areas. The list of major terrestrial fauna in the study area is given in Table 3.32.

Table 3-32: List of Major Terrestrial and Avi-Fauna in the Study Area

Sl. No.	Common Name	Scientific Name	Schedule (as per WPA, 1972)
Mammals			
1	Jackal	*Canis aureus*	Sch II
2	Shrew	*Suncus murinus*	-
3	Common langur	*Presbytis entellus*	Sch II
4	Indian Palm Squirrel	*Funambulus palmarum*	Sch IV
5	Wild pig	*Sus scrofa*	Sch III
6	Indian hare	*Lepus nigricollis*	Sch IV
7	Mongoose	*Herpestes edwardsii*	Sch II
Reptiles & Amphibians			
1	Cobra	*Naja naja*	Sch II
2	Rat snake	*Ptyas mucosus*	Sch II
3	Russel's viper	*Vipera russelli*	Sch II
4	Rock lizard	*Calotis versicolor*	-
5	House gecko	*Hemidactylus flaviviridis*	-
Birds			

Sl. No.	Common Name	Scientific Name	Schedule (as per WPA, 1972)
1	Common myna	*Acridotheres tristis*	Sch IV
2	Cattle egret	*Bubulcus ibis*	Sch IV
3	Black drongo	*Dicrurus adsinulis*	Sch IV
4	Common red shank	*Tringa tolanus*	Sch IV
5	Common sparrow	*Passer domesticus*	-
6	Darter	*Anhinga rufa*	Sch IV
7	Jungle owlet	*Glaucidium radiatum*	Sch IV
8	Koel	*Cuculus canorus*	Sch IV
9	Large cormorant	*Phaiacrocorax carbo*	Sch IV
10	Shikra	*Accipiter gentiles*	Sch IV
11	Spotted dove	*Spilopelia chinensis*	Sch IV

Source: (i) Primary survey by Greencindia Team (ii) Interaction with local people

3.14.5 AQUATIC ECOLOGY

The aquatic ecology of the area is represented by fishes and planktonic groups. About 15 species of fishes was recorded during the study period (refer Table 3.32). The planktons recorded are given in Table 3.33

Table 3-33: List of Fishes Recorded

Common Name	Scientific Name
Sidhari	*Puntius ticto*
Karaunchh	*Labeo calbasu*
Rohu	*Labeo rohita*
Mahasir	*Tor tor*
Chelwa	*Chela bacaila*
Nain	*Cirhinus mrigala*
Katala	*Catla catla*
Pahina	*Wallago attu*
Saur	*Channa punctatus*
Mangur	*Clarius batrachus*
Singhi	*Heteropneustes fossilis*
Tengra	*Mystus seenghala*
Patara	*Notopterus chitela*
Bam	*Mastacembelus armatus*
Silond catfish	*Silonia silondia*
Snakehead fish	*Chana punctatus*

Source: (i) Primary survey by Greencindia Team (ii) Interaction with local people

Table 3-34: List of Planktons

Scientific Name	Group

Scientific Name	Group
Phytoplankton	
Ankistordesmus Facatus	Chlorophyceae
Chara sp	
Chlorella sp	
Hydrodictyon sp	
Nitella sp	
Spirogyra sp	
Ankistordesmus Facatus	Cyanophyceae
Chara sp	
Chlorella sp	
Hydrodictyon sp	
Nitella sp	
Spirogyra sp	
Asterionella sp	Bacillariophyceae
Cyclotella sp	
Cymbella sp	
Naviculla sp	
Nitzshina sp	
Synedra sp	
Zooplankton	
Anuraea sp	Rotifera
Filinia sp	
Rotifer neptunis	
Colpidius sp	Protozoa
Euglina sp	
Paramecium sp	
Vorticella sp	
Cyclops sp	Crustaceans
Cypris sp	
Daphnia sp	

3.15 SOCIAL ENVIRONMENT

The sand mine is located in village Patyora, District Hamirpur in Uttar Pradesh. The socio economic profile will provide the insight to population growth rate; population density, gender ratio, Work Participation Rate and description of the vulnerable population in the project impact and influence area.

3.15.1 DISTRICT AT A GLANCE

An official Census 2011 detail of Hamirpur, a district of Uttar Pradesh has been released by Directorate of Census Operations in Uttar Pradesh. Enumeration of key persons was also done by census officials in Hamirpur District of Uttar Pradesh.

In 2011, Hamirpur had population of 1,104,285 of which male and female were 593,537 and 510,748 respectively. In 2001 census, Hamirpur had a population of 1,043,724 of which males were 563,801 and remaining 479,923 were females. Hamirpur District population constituted 0.55 percent of total Maharashtra population. In 2001 census, this figure for Hamirpur District was at 0.63 percent of Maharashtra population.

There was change of 5.80 percent in the population compared to population as per 2001. In the previous census of India 2001, Hamirpur District recorded increase of 18.11 percent to its population compared to 1991. The demography of the district is given in Table 3.34

Table 3-35: Demographic Characteristics of the District

Description	2011	2001
Actual Population	1,104,285	1,043,724
Male	593,537	563,801
Female	510,748	479,923
Population Growth	5.80%	18.11%
Area Sq. Km	4,021	4,021
Density/km^2	275	253
Proportion to Uttar Pradesh Population	0.55	0.63
Sex Ratio (Per 1000)	861	851
Child Sex Ratio (0-6 Age)	886	903
Average Literacy	68.77	57.38
Male Literacy	79.76	71.87
Female Literacy	55.95	40.14
Total Child Population (0-6 Age)	154,355	188,740
Male Population (0-6 Age)	81,834	99,176
Female Population (0-6 Age)	72,521	89,564
Literates	653,299	490,606
Male Literates	408,125	333,921
Female Literates	245,174	156,685
Child Proportion (0-6 Age)	3.98	18.08
Boys Proportion (0-6 Age)	13.79	17.59
Girls Proportion (0-6 Age)	14.20	14.20

Source: Uttar Pradesh Census 2001 and 2011

3.15.2 STUDY AREA

The socio-economic profile of the study area based on Primary Census Abstract of India 2001 & District Census Handbook 2001 and is classified into following points:

- Population
- Social profile
- Occupational pattern
- Infrastructure facilities

3.15.3 DEMOGRAPHIC PROFILE

There are 79 villages in the study area. These villages have 37266 households accumulating 199555 population. The overall household size has declined from 5.9 in 2001 to 5.4 in 2011. According to the survey, gender ratio of study area was 876 in 2011 which is lower as compared to the national gender ratio i.e. 940. The details are given in Table 3.35.

Table 3-36: Demographic Profile of the Study Area

Gender Ratio									
Parameters	Number of Villages	Total Population		Male		Female		Gender Ratio	
		2001	2011	2001	2011	2001	2011	2001	2011
within 2 km	5	9292	15141	5078	8137	4214	7004	830	861
2km to 5 km	20	29473	34896	15563	18571	13910	16325	894	879
5km to 7km	17	70472	77842	37824	41570	32648	36272	863	873
7km to 10km	37	63405	71676	33731	38108	29674	33568	880	881
Study Area	79	172642	199555	92196	106386	80446	93169	873	876

3.15.4 HH SIZE:

Table 3-37: House hold size of the Study Area

Parameters	Number of Villages	Total Population		No. of Households		HH Size	
		2001	2011	2001	2011	2001	2011
within 2 km	5	9292	15141	1549	2740	6.0	5.5
2km to 5 km	20	29473	34896	4963	6310	5.9	5.5
5km to 7km	17	70472	77842	12004	14716	5.9	5.3
7km to 10km	37	63405	71676	10948	13500	5.8	5.3
Study Area	79	172642	199555	29464	37266	5.9	5.4

Source: Primary Census Abstract, Census of India, 2001, 2011

3.15.5 CASTE DIVISION

Table 3.38 depicts the distribution of Scheduled Caste and Scheduled Tribe population in the Study Area.

Table 3-38: Caste Distribution in the Study Area

Parameters	Number of Villages	Total Population		SC				ST			
		2001	2011	2001	2011	2001(%)	2011(%)	2001	2011	2001(%)	2011(%)
within 2 km	5	9292	15141	896	1485	9.6	9.8	0	0	0.0	0.0
2km to 5 km	20	29473	34896	3514	3727	11.9	10.7	0	0	0.0	0.0
5km to 7km	17	70472	77842	11598	13156	16.5	16.9	21	30	0.0	0.0
7km to 10km	37	63405	71676	12885	14524	20.3	20.3	0	0	0.0	0.0

Study Area	79	172642	199555	28893	32892	16.7	16.5	21	30	0.0	0.0

Source: Primary Census Abstract, Census of India, 2001, 2011

As per 2011 census, the study area has about 16.5% scheduled caste population and 0.0% scheduled tribe population. The rest of the population belong to general caste.

3.15.6 LITERACY RATE

Literacy is one of the most significant indicators of human and social development. This not only reflects on the educational attainment of the population but also reflects on the status of women, caste equation and economic condition of a particular area. It also shows the skill level of the people and their capability to get trained and work. Table 3.39 indicates the gender-wise literacy rate of the people in the project impact villages.

Table 3-39: Literacy Rate in the Study Area

Parameters	Number of Villages	Total Literate				Male Literate				Female Literate			
		2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)
within 2 km	5	3938	8662	42.38	57.21	2718	5450	53.53	66.98	1220	3212	28.95	45.86
2km to 5 km	20	12772	19465	43.33	55.78	8421	12039	54.11	64.83	4351	7426	31.28	45.49
5km to 7km	17	41599	52516	59.03	67.46	25748	30908	68.07	74.35	15851	21608	48.55	59.57
7km to 10km	37	33287	45246	52.50	63.13	21145	27231	62.69	71.46	12142	18015	40.92	53.67
Study Area	79	91596	125889	53.06	63.08	58032	75628	62.94	71.09	33564	50261	41.72	53.95

Source: Primary Census Abstract, Census of India, 2001, 2011

The female literacy rate of the study area has increased with time (41.72% in 2001 & 53.95% in 2011). The male literacy rate also has increased which was 62.94% in 2001 and 71.09% in 2011. The data shows that the average literacy rate of the area has increased with time.

3.15.7 OCCUPATIONAL STRUCTURE

The occupational structure of the influence area is studied with reference to main workers and marginal workers. Defined by the census department which consists of cultivators and agricultural labors are those engaged in live-stock, forestry, fishing, mining and quarrying. Other workers and household industrial workers are those engaged in manufacturing, processing and repairs in house hold industry, construction, trade and commerce, transportation and communication and other services.

Table 3-40: Category of Workers in the Study Area

Parameters	Main worker					Marginal Worker				Non Worker			
	Number of Villages	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)
within 2 km	5	2970	2713	79.05	48.92	787	2833	20.95	51.08	5535	9595	59.57	63.37
2km to 5 km	20	7277	7528	62.20	50.12	4422	7491	37.80	49.88	17774	19877	60.31	56.96
5km to 7km	17	17198	18278	72.72	70.20	6452	7760	27.28	29.80	46822	51804	66.44	66.55
7km to 10km	37	16581	18117	68.40	67.78	7662	8611	31.60	32.22	39162	44948	61.76	62.71
Study Area	79	44026	46636	69.50	63.60	19323	26695	30.50	36.40	109293	126224	63.31	63.25

Source: Primary Census Abstract, Census of India, 2001, 2011

In the villages around the study area, people mainly earn from agriculture and animal rearing. From Table 3.40, it can be said that the percentage of non-workers is high (> 60%) in the study area as

compared to the total workers. It can also be seen that the percentage of workers have decreased mariginally by about 0.06% from 2001 to 2011.

Table 3-41: Category of Workers in the Study Area

Parameters	Number of Villages	Main worker															
		Agriculture Laborers				Cultivators				MAIN_HH_P				MAIN_OT_P			
		2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)
within 2 km	5	1053	1196	35.45	44.08	1692	983	56.97	36.23	37	69	1.25	2.54	188	465	6.33	17.14
2km to 5 km	20	1216	2178	16.71	28.93	4997	3431	68.67	45.58	109	398	1.50	5.29	955	1521	13.12	20.20
5km to 7km	17	2246	3485	13.06	19.07	5893	4701	34.27	25.72	475	550	2.76	3.01	8584	9542	49.91	52.20
7km to 10km	37	2965	5731	17.88	31.63	8697	6331	52.45	34.95	407	740	2.45	4.08	4512	5315	27.21	29.34
Study Area	79	7480	12590	16.99	27.00	21279	15446	48.33	33.12	1028	1757	2.33	3.77	14239	16843	32.34	36.12

Source: Primary Census Abstract, Census of India, 2001, 2011

Table 3-42: Category of Workers in the Study Area

Parameters	Number of Villages	Marginal Worker		Marginal worker															
				Agriculture Laborers				Cultivators				MARG_HH_P				MARG_OT_P			
		2001	2011	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)
within 2 km	5	787	2833	349	1623	44.35	57.29	350	251	44.47	8.86	4	148	0.51	5.22	84	811	10.67	28.63
2km to 5 km	20	4422	7491	1980	4867	44.78	64.97	2103	971	47.56	12.96	48	720	1.09	9.61	291	933	6.58	12.45
5km to 7km	17	6452	7760	2885	4003	44.71	51.59	1949	738	30.21	9.51	112	554	1.74	7.14	1506	2465	23.34	31.77
7km to 10km	37	7662	8611	3673	4807	47.94	55.82	2603	1138	33.97	13.22	174	568	2.27	6.60	1212	2098	15.82	24.36
Study Area	79	19323	26695	8887	15300	45.99	57.31	7005	3098	36.25	11.61	338	1990	1.75	7.45	3093	6307	16.01	23.63

Source: Primary Census Abstract, Census of India, 2001, 2011

3.15.8 INFRASTRUCTURE FACILITIES

Educational Facilities: As evident from Table 3.43, the number of primary schools, numbers of middle school, secondary school and senior secondary schools have increased from 2001 to 2011. This is a very healthy sign which is reflected in the increase of literacy rate of the area.

Table 3-43: Educational facilities in the study area

Parameters	Number of Villages	P_SCH		M_SCH		S_SCH		S_S_SCH	
		2001	2011	2001	2011	2001	2011	2001	2011
within 2 km	5	8	10	2	6	2	3	0	1
2km to 5 km	20	24	29	3	16	0	1	0	0
5km to 7km	16	29	35	12	20	1	8	0	4
7km to 10km	37	56	69	20	42	4	15	3	14
Study Area	78	117	143	37	84	7	27	3	19

Source: Census of India, 2001, 2011

Health Facilities: Health facilities in the study area are not up to the mark. The number of maternity and child welfare centres have reduced drastically from 2001 to 2011. The number of primary health centres have increased marginally from 2 to 9 from 2001 to 2011. The number of Primary Health Sub-

Centres are below par and Family Welfare centres have increased marginally in umber over the study period. There is just one TB clinic catering to this whole area.

Table 3-44: Healthcare facilities in the study area

Parameters	Number of Villages	MCW_CNTR		PH_CNTR		PHS_CNT		FWC_CNTR		TB Clinic (Numbers)	
		2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
within 2 km	5	2	0	0	1	1	1	0	0	0	0
2km to 5 km	20	1	0	0	1	0	0	0	2	0	0
5km to 7km	16	2	1	0	3	2	0	1	1	0	0
7km to 10km	37	6	6	2	4	4	5	3	5	0	2
Study Area	78	11	7	2	9	7	6	4	8	0	2

Source: Census of India, 2001, 2011

Drinking Water Facilities: Table 3.45 indicates that handpumps are the main source of drinking water in the study area. About 78 hand pumps are there in the study area, followed by 10 taps and 45 tubewells. Drinking water is available in all villages and people do not have to spend much time to get drinking water.

Table 3-45: Drinking water facilities in the study area

Parameters	Number of Villages	TAP		WELL		TANK		HANDPUMP		TUBEWELL	
		2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
within 2 km	5	2	0	5	4	2	4	5	5	2	4
2km to 5 km	20	6	1	20	14	7	10	20	20	2	14
5km to 7km	16	5	2	15	11	5	9	16	16	3	10
7km to 10km	37	16	7	36	18	15	17	36	37	19	17
Study Area	78	29	10	76	47	29	40	77	78	26	45

Source: Census of India, 2001, 2011

Banking and Post Office Facilities: Number of post offices in the study area have increased from 9 to 10 over 2001-2011 as can be observed from Table 3.46. The number of commercial banks have also increased in number from 2001 to 2011 which has been offset by the increase in number of cooperative banks and agricultural credit societies but not to a huge extent.

Table 3-46: Bank and Post Office facilities in the study area

Parameters	Number of Villages	POST_OFF		COMM_BANK		COOP_BANK		AC_SOC	
		2001	2011	2001	2011	2001	2011	2001	2011
within 2 km	5	2	2	1	0	0	0	1	0
2km to 5 km	20	2	5	0	0	0	0	0	0
5km to 7km	16	5	4	1	2	2	1	0	2
7km to 10km	37	9	10	1	2	3	5	3	3
Study Area	78	18	21	3	4	5	6	4	5

Source: Census of India, 2001, 2011

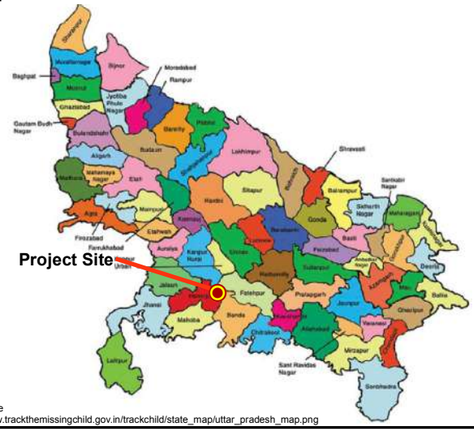
80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

26°0'0"N 25°57'0"N 25°54'0"N 25°51'0"N

1067

N

10.0km



Key Map of Uttar Pradesh

271

Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Project Site
- Study Area

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2017

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Study Area Map

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
QCI-NABET Accrediate Environment Consultant Certificate No. NABET/EIA/1619/RA0058

Graphic Scale:
0 800 1,600 3,200 4,800 6,400 m

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Date	20/07/2018			
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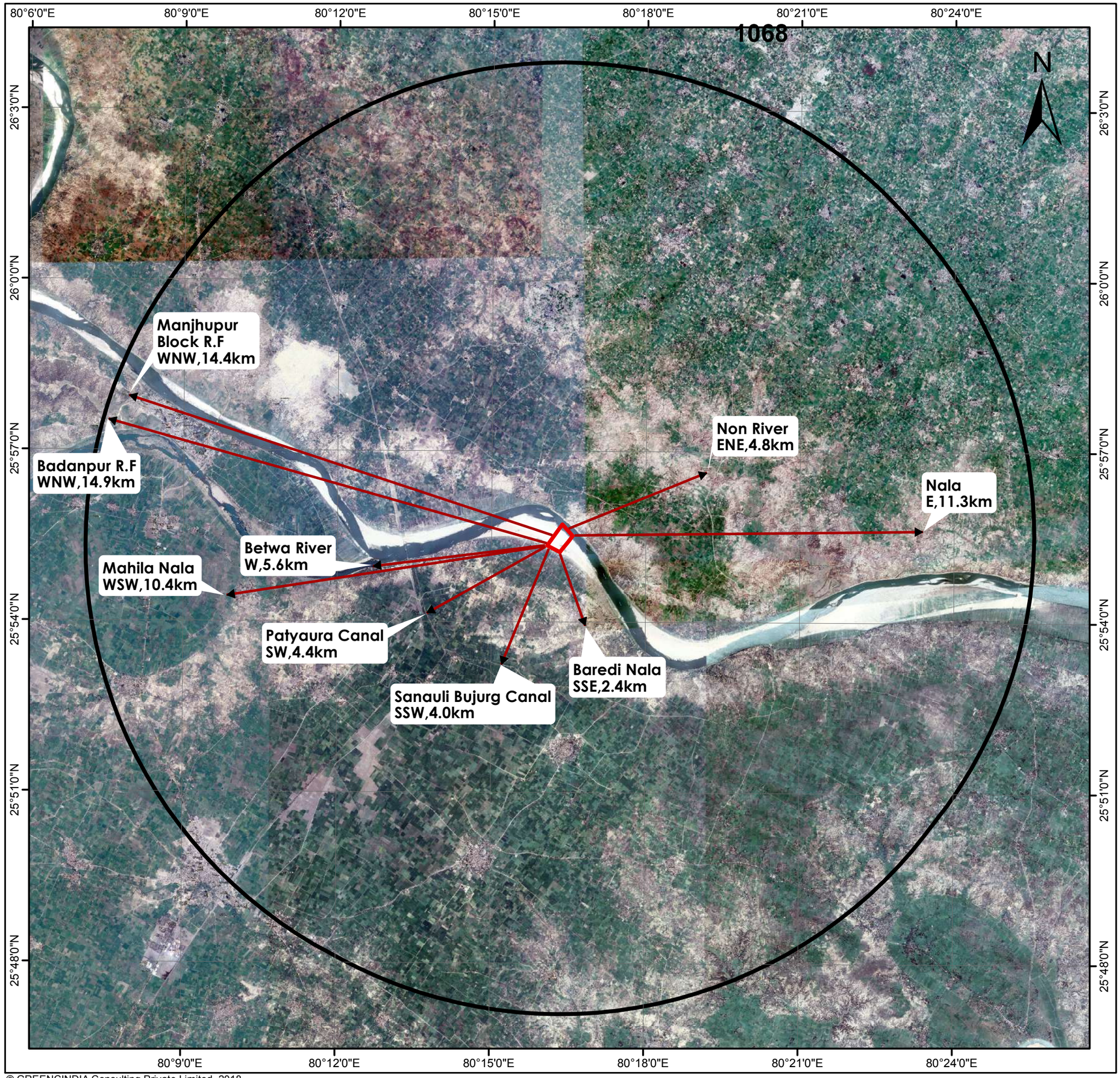
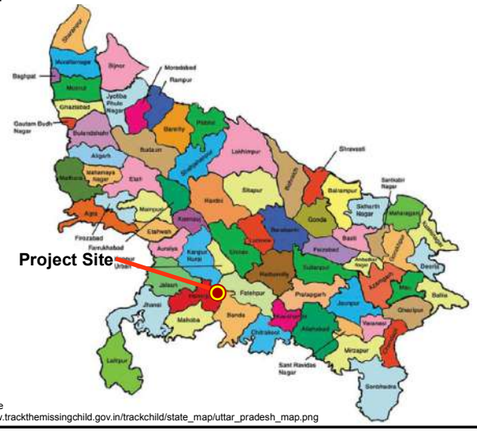


Key Map of Uttar Pradesh

272



Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Project Site
- 15Km Buffer

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2017

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Environment Sensitive Locations

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
QCI-NABET Accrediate Environment Consultant Certificate No. NABET/EIA/1619/RA0058

Graphic Scale:
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Revision	00			

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1069

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

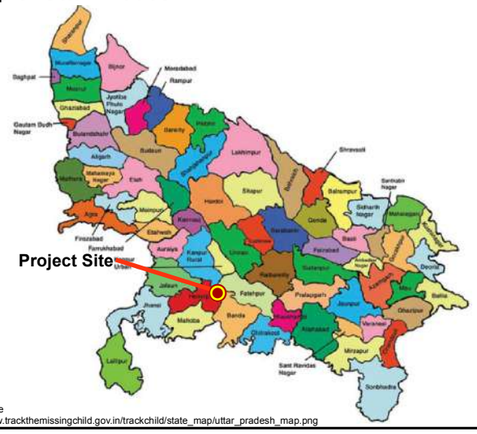
26°0'0"N 25°57'0"N 25°54'0"N 25°51'0"N

N

Gauhrari
Amauli
Kanpur Nagar
Manepur
Kewatra
Mandri
GosanPur
Sarhan Buzurg
Kandhauli
Kewat Purwa
Jahanabad Sathigawan Rd.
Kulkhera
Surajpur
Dharchhuwa
Bharsa
Non River
Maidhari
Nimdapur
Kahinjal
Gangpur
Chaklala
Bhaglapur
Rura
Makrandpur
Sarhan Khurd
Gangupur
Parseda ka Dera
Govindpur Bilan
Lahuri mau
Banitala
Raharpur Batgawan
Aswan Mau
Hamirpur
Bhatpurwal
Sikandarpur Aunra Nisfi
Marwahi
Mirapur East
Samah
Parseda
Shahbazpur
Dabsaura
Rustampur
Anaisipur
Central Railway Banda Kanpur
Mahna
Ayodhaya
Chandpur
Mirapur west
Siphon
Gauri aunra
Moihatal
Ptyaura
Lakhnipur
Mawai
Tikrauli
Kalan
Khura
Jalwapur
Rithwan
Baragaon
Awajpur
Kal mitti
Yamuna River
Bhaunra
Narayan
Jalala
Bhamhaura
Angual fai
Baruwa
Simnauri
Gahtauli Minor No. 1
Sarauli Buzurg
Devgaon
Gahtauli Minor No. 2
Jhanjhari
Patyaura
Terha Minor No. 1
Terha Minor No. 2
Pachkhura Buzurg
Terha

Key Map of Uttar Pradesh

273



Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Canal
- Road
- Railway
- Project Site
- Study Area(10 km)
- Builtup
- Waterbody
- Sandy Area
- Open Scureb
- Industry
- Agriculture Land

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2018

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Land Use Pattern Of Study Area

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
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Graphic Scale:
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Revision	00			

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1070

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

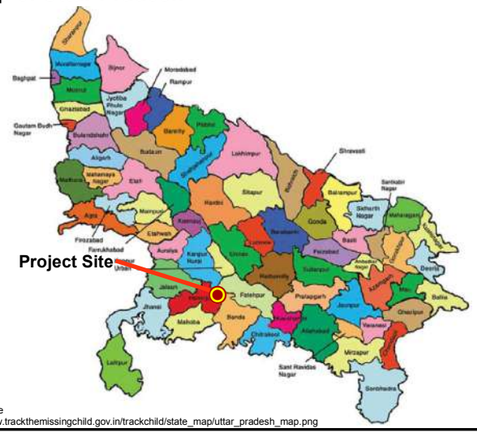
26°0'0"N 25°57'0"N 25°54'0"N 25°51'0"N

N

Gauhrari
Kanpur Nagar
Amauli
Manepur
Kewatra
Mandri
GosanPur
Sarhan Buzurg
Kandhauli
Kewat Purwa
Surajpur
Kulkhera
Dharchhuwa
Bharsa
Non River
Maidhari
Nimdapur
Kahinjal
Chaklala
Gangpur
Bhaglapur
Rura
Sarhan Khurd
Makrandpur
Gangupur
Parseda ka Dera
Govindpur Bilan
Lahuri mau
Banitala
Raharpur Batgawan
Aswan Mau
Hamirpur
Bhatpurwal
Sikandarpur Aunra Nisfi
Marwahi
Samah
Mirapur East
Parseda
Shahbazpur
Dabsaura
Rustampur
Anaisipur
Mirapur west
Mahna
Ayodhaya
Chandpur
Siphon
Gauri aunra
Moihatal
Ptyaura
Lakhnipur
Tikrauli
Kalan
Khura
Mawai
Jalwapur
Rithwan
Awajpur
Baragaon
Kal mitti
Yamuna River
Bhaunra
Narayan
Jalala
Bhamhaura
Angual fai
Baruwa
Simnauri
Sarauli Buzurg
Devgaon
Gahtauli Minor No. 1
Gahtauli Minor No. 2
Jhanjhari
Patyaura
Terha Minor No. 1
Terha Minor No. 2
Pachkhura Buzurg
Terha

Key Map of Uttar Pradesh

274



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Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Canal
- Streams
- Builtup
- Waterbody
- Sandy Area
- Project Site
- Study Area(10 km)

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2018

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Drainage Pattern of Study Area

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
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Graphic Scale:
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Drafted By:	Checked By:	Approved By:

Date	22/08/2018			
Revision	00			

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1071

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

26°0'0"N 25°57'0"N 25°54'0"N 25°51'0"N

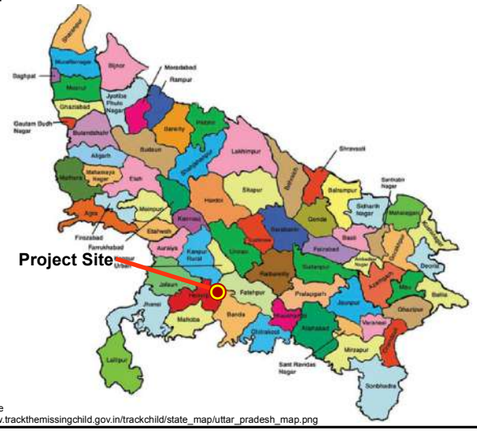
N

Gauhrari
Kanpur Nagar
Amauli
Manepur
Kewatra
Mandri
GosanPur
Sarhan Buzurg
Kandhauli
Kewat Purwa
Jahanabad Sathigawan Rd.
Surajpur
Kulkhera
Dharchhuwa
Bharsa
Non River
Maidhari
Nimdapur
Kahinjal
Gangpur
Chaklala
Bhaglapur
Rura
Makrandpur
Sarhan Khurd
Gangupur
Lahuri mau
Parseda ka Dera
Govindpur Bilan
Banitala
Raharpur Batgawan
Aswan Mau
Hamirpur
Bhatpurwal
Sikandarpur Aunra Nisfi
Marwahi
Samah
Mirapur East
Parseda
Shahbazpur
Dabsaura
Rustampur
Anaisipur
Central Railway
Mahna
Ayodhaya
Chandpur
Mirapur west
Siphon
Gauri aunra
Moihatal
S3
S1
S2
Tikrauli
Ptyaura
Kalan
Khura
Mawai
Baragaon
Jalwapur
Rithwan
Awajpur
Kal mitti
Yamuna River
Bhaunra
Narayan
Jalala
Bhamhaura
Angual fai
Baruwa
Simnauri
Gahtauli Minor No. 1
Sarauli Buzurg
Devgaon
Gahtauli Minor No. 2
Jhanjhari
Patyaura
Terha Minor No. 1
Terha Minor No. 2
Pachkhura Buzurg
Terha

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

Key Map of Uttar Pradesh

275



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Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Soil Sampling Location
- Canal
- Road
- Railway
- Builtup
- Waterbody
- Sandy Area
- Project Site
- Study Area(10 km)

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2018

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Soil Sampling Location Map

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
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Graphic Scale:
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Drafted By:	Checked By:	Approved By:

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Revision	00			

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1072

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

26°0'0"N 25°57'0"N 25°54'0"N 25°51'0"N

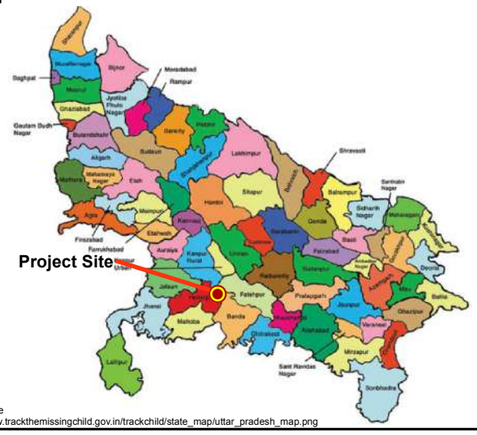
N

Gauhrari
Kanpur Nagar
Amauli
Manepur
Kewatra
Mandri
Kandhauli
GosanPur
Sarhan Buzurg
Kewat Purwa
Jahanabad Sathigawan Rd.
Surajpur
Kulkhera
Dharchhuwa
Bharsa
Non River
Maidhari
Nimdapur
Kahinjal
Chaklala
Gangpur
Bhaglapur
Rura
Makrandpur
Sarhan Khurd
Gangupur
Parseda ka Dera
Govindpur Bilan
Lahuri mau
Banitala
Raharpur Batgawan
Aswan Mau
Hamirpur
Bhatpurwal
Sikandarpur Aunra Nisfi
Marwahi
Samah
Mirapur East
Parseda
AAQ3
Shahbazpur
Dabsaura
Rustampur
AAQ4
Anaisipur
Mahna
Ayodhaya
Chandpur
Central Railway Banda Kanpur
Mirapur west
Siphon
Gauri aunra
AAQ2
Moihatal
Ptyaura
Lakhnipur
AAQ1
Tikrauli
Kalan
Khura
Mawai
Jalwapur
Rithwan
Baragaon
Awajpur
Kal mitti
Yamuna River
Bhaunra
Narayan
Jalala
Bhamhaura
Angual fai
Baruwa
Simnauri
Gahtauli Minor No. 1
Sarauli Buzurg
Devgaon
Gahtauli Minor No. 2
Jhanjhari
Patyaura
Terha Minor No. 1
Terha Minor No. 2
Pachkhura Buzurg
Terha

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

Key Map of Uttar Pradesh

276



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Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Air Monitoring Location
- Canal
- Road
- Railway
- Builtup
- Waterbody
- Sandy Area
- Project Site
- Study Area(10 km)

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2018

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Air Monitoring Location Map

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
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Graphic Scale:
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Revision	00			

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1073

277

80°12'0"E
80°15'0"E
80°18'0"E
80°21'0"E
26°0'0"N
25°57'0"N
25°54'0"N
25°51'0"N

N

Gauhrari
Kanpur Nagar
Amauli
Manepur
Kewatra
Mandri
GosanPur
Sarhan Buzurg
Kandhauli
Kewat Purwa
Jahanabad Sathigawan Rd.
Surajpur
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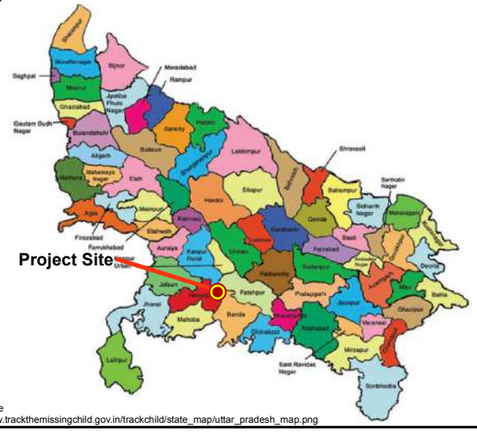
Dharchhuwa
Bharsa
Non River
Maidhari
Nimdapur
Kahinjal
Gangpur
Chaklala
Bhaglapur
Rura
Makrandpur
Sarhan Khurd
Gangupur
Parseda ka Dera
Govindpur Bilan
Lahuri mau
Banitala
Raharpur Batgawan
Aswan Mau
Hamirpur
Bhatpurwal
Sikandarpur Aunra Nisfi
Marwahi
Samah
Parseda
NQ3
Mirapur East
Shahbazpur
Dabsaura
Rustampur
NQ4
Anaisipur
Central Railway
Mahna
Ayodhaya
Chandpur
Siphon
Gauri aunra
Mirapur west
NQ2
Moihatal
Ptyaura
Lakhnipur
NQ1
Tikrauli
Kalan
Khura
Mawai
Jalwapur
Rithwan
Awajpur
Baragaon
Kal mitti
Yamuna River
Bhaunra
Narayan
Jalala
Bhamhaura
Angual fai
Baruwa
Simnauri
Gahtauli Minor No. 1
Sarauli Buzurg
Devgaon
Gahtauli Minor No. 2
Jhanjhari
Patyaura
Terha Minor No. 1
Pachkhura Buzurg
Terha Minor No. 2
Terha

Key Map of Uttar Pradesh



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Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Noise Monitoring Location
- Canal
- Road
- Railway
- Builtup
- Waterbody
- Sandy Area
- Project Site
- Study Area(10 km)

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2018

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Noise Monitoring Location Map

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
QCI-NABET Accrediate Environment Consultant Certificate No. NABET/EIA/1619/RA0058

Graphic Scale:
0 800 1,600 3,200 4,800 6,400 m

Drafted By:	Checked By:	Approved By:

Date	22/08/2018			
Revision	00			

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1074

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

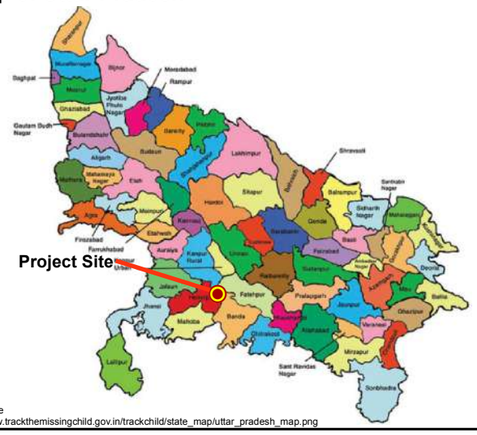
26°0'0"N 25°57'0"N 25°54'0"N 25°51'0"N

N

Gauhrari
Kanpur Nagar
Amauli
Manepur
Kewatra
Mandri
GosanPur
Sarhan Buzurg
Kandhauli
Kewat Purwa
Jahanabad Sathigawan Rd.
Surajpur
Kulkhera
Dharchhuwa
Bharsa
Non River
Maidhari
Nimdapur
Kahinjal
Gangpur
Chaklala
Bhaglapur
Rura
Makrandpur
Gangupur
Sarhan Khurd
Parseda ka Dera
Govindpur Bilan
Lahuri mau
Banitala
Raharpur Batgawan
Aswan Mau
Hamirpur
Bhatpurwal
Sikandarpur Aunra Nisfi
Marwahi
Mirapur East
Samah
Parseda
GW3
Shahbazpur
Dabsaura
Anaisipur
Rustampur
Central Railway
Mahna
Ayodhaya
Chandpur
Mirapur west
SW2 Siphon
Gauri aunra
SW1
GW2
Mohatal
Ptyaura
Lakhnipur
GW1
Tikrauli
Kalan
Khura
Mawai
Jalwapur
Rithwan
Awajpur
Baragaon
Kal mitti
Yamuna River
Bhaunra
Narayan
Jalala
Bhamhaura
Angual fai
Baruwa
Simnauri
Sarauli Buzurg
Devgaon
Gahtauli Minor No. 1
Gahtauli Minor No. 2
Jhanjhari
Patyaura
Terha Minor No. 1
Terha Minor No. 2
Pachkhura Buzurg
Terha
Railway Banda Kanpur

Key Map of Uttar Pradesh

278



Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Surface Water Sampling Location
- Ground Water Sampling Location
- Canal
- Road
- Railway
- Builtup
- Waterbody
- Sandy Area
- Project Site
- Study Area(10 km)

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2018

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Water Sampling Location Map

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

Environment Consultant:
GREENCINDIA Consulting Private Limited
(An ISO:9001 QMS, ISO: 14001 EMS & OHSAS: 18001 H&S MS Certified by BSI)
QCI-NABET Accrediate Environment Consultant Certificate No. NABET/EIA/1619/RA0058

Graphic Scale:
0 800 1,600 3,200 4,800 6,400 m

Drafted By:	Checked By:	Approved By:

Date	22/08/2018			
Revision	00			

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1075

279

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

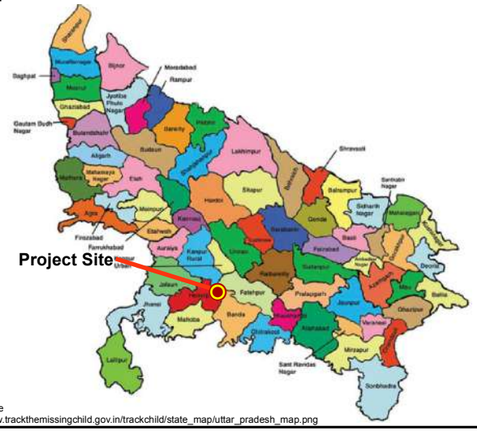
26°0'0"N 25°57'0"N 25°54'0"N 25°51'0"N

N

Gauhari
Kanpur Nagar
Amauli
Manepur
Kewatra
Mandri
GosanPur
Sarhan Buzurg
Kandhauli
Kewat Purwa
Jahanabad Sathigawan Rd.
Surajpur
Kulkhera
Dharchhuwa
Bharsa
Non River
Maidhari
Nimdapur
Kahinjal
Gangpur
Chaklala
Bhaglapur
Rura
Makrandpur
Sarhan Khurd
Gangupur
Parseda ka Dera
Govindpur Bilan
Lahuri mau
Banitala
Raharpur Batgawan
Aswan Mau
Hamirpur
Bhatpurwal
Sikandarpur Aunra Nisfi
Marwahi
Mirapur East
Samah
Parseda
Shahbazpur
Dabsaura
Rustampur
Anaisipur
Mahna
Ayodhaya
Chandpur
Mirapur west
Siphon
Gauri aunra
Central Railway Banda Kanpur
Moihatal
T1
Ptyaura
Lakhnipur
Mawai
Tikrauli
T2
Kalan
Khura
Jalwapur
Rithwan
Awajpur
Baragaon
Kal mitti
Yamuna River
Bhaunra
Narayan
T3
Jalala
Bhamhaura
Angual fai
Baruwa
Simnauri
Devgaon
Gahtauli Minor No. 1
Gahtauli Minor No. 2
Jhanjhari
Sarauli Buzurg
T4
Patyaura
Terha Minor No. 1
Terha Minor No. 2
Pachkhura Buzurg
Terha

80°12'0"E 80°15'0"E 80°18'0"E 80°21'0"E

Key Map of Uttar Pradesh



Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Traffic Monitoring Location
- Canal
- Road
- Railway
- Builtup
- Waterbody
- Sandy Area
- Project Site
- Study Area(10 km)

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2018

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Traffic Monitoring Location Map

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

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Graphic Scale:
0 800 1,600 3,200 4,800 6,400 m

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Date	22/08/2018			
Revision	00			

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80°16'0"E 80°16'20"E 80°16'40"E

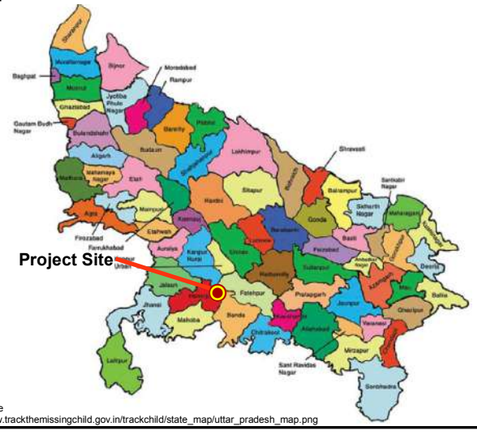
25°55'40"N 25°55'20"N 25°55'0"N

N

Yamuna River

Project Site

Key Map of Uttar Pradesh



Scale: Not to Scale
Source: http://www.trackthemissingchild.gov.in/trackchild/state_map/uttar_pradesh_map.png

Legend

- Project Site
- Waterbody
- Sandy Area

Source:
1. Project Layout Plan, SY
2. Data Provided by FAE (LU)
3. Google Satellite Imagery, 2018

Software Used:
1. ArcGIS 10.1, 2. AutoCAD 2012, 3. ER Mapper 7, 4. Erdas Imagine 10

Figure: Landuse Pattern of the Project Site

Project:
Sand/ Morrum Mining Project
Village: Patyora, District: Hamirpur, Uttar Pradesh

Project Proponent:
Sri Shailendra Yadav

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Graphic Scale:
0 70 140 280 420 560 m

Drafted By:	Checked By:	Approved By:

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Revision	00			

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CHAPTER-4

4. IMPACT ASSESSMENT & MITIGATION MEASURES

4.1 INTRODUCTION

Mining activities cause adverse impacts on the surrounding environment unless proper environmental management plan is adopted. Selecting suitable sites for mining and also adopting all the guidelines prescribed by MoEF&CC and Indian Bureau of Mines (IBM) can minimize the major possible impacts. In this chapter, an attempt has been made to quantify or quality the possible environmental impacts on various features such as air quality, water use and quality, land-use, ecological considerations, soil quality and socio-economic factors. The above-mentioned aspects have been studied to identify the impacts of the proposed production from the mine. The magnitude and significance of the environmental pollution caused by mining depends on method of mining, scale and concentration of mining activity. On the basis of the impact analysis, the mitigating action and future monitoring requirement are focused in the Environmental Management Plan for counting or minimizing adverse impacts. The impact matrix is given in Table 4.1.

Table 4- 1: Environment Impact Matrix

Environmental Factors	Activities						
	Open Cast-Operation	Natural Replenishment	Mineral Transportation	Plantation	Employment Generation	Infrastructure development	Traffic Generation
Ambient Air	•		•	*			•
Water Resource	•						
Water Quality	•						
Ambient Noise	•		•				•
Flora and Fauna		*	•	*			
Soil Quality	•		•	*			
Land-use							
Health & Safety	•		•	*			•
Socio-economic	•		*	*	*	•	

*• Adverse Impact * Beneficial Impacts*

4.2 BRIEF DESCRIPTION OF IMPACTS

A brief description of impacts by the proposed project is given in Table 4.2

Table 4- 2: Description of Identifiable Impacts

Sl. No.	Activities	Description of impacts
1	Vegetation	Moderate impact: uprooted plants, damaged to plant parts such as branches, loss of tree species, disturbances to survival, habitat loss

Sl. No.	Activities	Description of impacts
2	Animals	Moderate impact: loss of aquatic habitats (specially for fish and phytoplankton), decreased species diversity due to loss of sensitive species, loss of spawning grounds for aquatic species and river bank dwelling species, disturbances to food webs, habitat loss for bank dwelling species such as aquatic birds, reptiles, amphibians.
3	Ecosystem stability	Moderate impact: soil erosion, loss of fertile soil, bank instability and collapse, loss of protective structures provided by trees, changes to topography due to temporary foot paths and transportation network, obstacles to water flow
4	Water quality	Moderate Impact: Pollution by sedimentation, silt loads, vehicular discharge, solid waste dumping by humans, visible impairment of water quality, decreased dissolved oxygen concentration

4.3 CONSTRUCTION PHASE

This is a sand mining project in riverbed. Impacts are not identified as no separate construction stage is envisaged in this project.

4.4 OPERATION PHASE

Some of the impacts identified in various phases of operation are insignificant and do not warrant much attention whereas some others are important especially with respect to the present context. Therefore objective is to identify those impacts, which are significant and require a detailed analysis for decision-making or formulating adequate management measures. This section deals with an assessment of impact of various mining activities on the existing environmental conditions. The methodology of assessment is based upon identification and description of the existing project activities as well as environmental components followed by predicting the impact of mining and associated activities on the environment. The environmental components that are likely to be influenced or modified by the continuation of project activities are:

- Air environment,
- Noise and vibration environment,
- Water environment,
- Land use
- Soil environment
- Hydrology
- Geology
- Biological environment,
- Socio-economic status of the area,
- Land and soil

4.5 IMPACT ON LAND

4.5.1 Impact On Land-Use

- The landscape of buffer zone will not be disturbed by the proposed river bed mining. Roads for transportation of mined minerals are already present and may be strengthened and/or maintained if required.
- Mining of minerals from the river bed will create a void which may affect the stream flow.
- Mining within a river bed may have some impact on the stream's physical characteristics, such as channel geometry, bed elevation in stream roughness of the bed, flow velocity, discharge capacity, sediment transportation capacity etc.
- Loss of adjacent land and/or structures.

4.5.2 Impact on Land Ownership

There are no R&R issues involved with this project. The ownership will not be changed as the land has been taken on lease which will be returned as it is after the lease period is over.

Mitigation Measures:

- Sand mining will be restricted down to 2.6 m below river bed or the water table whichever comes first.
- The riverbed mining will be done in unsaturated zone, thus minimizing loss to habitat.
- Dredging will not be allowed.
- The mining is planned in non-monsoon seasons only, so that the excavated area gets replenished during the monsoon each year.
- Grasses and bushes which have fibrous roots at the first instance are proposed to grown along the banks which enhances the binding properties of the soil. Hence protecting the banks.
- The systematic and scientific removal of sand and morrum will allow sedimentation during monsoon and not cause bed degradation.
- Restoration of bank will be ensured at the end of mine closure every year.
- No mining would be permissible in a river-bed up to a distance of five times of the span of a bridge structure on up-stream side and ten times the span of such bridge structure on down-stream side, subject to a minimum of 250 meters on the up-stream side and 500 meters on the down-stream side.
- There shall be an un-mined block of 50 meters width after very block of 1000 meters over which mining is undertaken.
- The proposed river-bed mining is unlikely to change any characteristics of the river as the mined minerals will be replenished every monsoon season.

4.6 IMPACT ON SOIL QUALITY

Soil compaction may occur due to movement of trucks outside the lease area which may affect the soil characteristics like soil fertility, infiltration rate, porosity etc. This ultimately restricts the growth of deep

rooted plants which finally leads to stagnation of succession. To excavate the sand from agricultural fields, first the layer of top soil has to be removed and stored separately for later use, which affects the soil characteristics.

Mitigation Measures:

- The movement of trucks will be restricted to haul roads.
- The roads that will be used for transportation of mined minerals are already constructed.
- The unpaved roads will be strengthened in order to reduce impact on soil quality.

4.7 IMPACT ON WATER ENVIRONMENT

Mining from a river bed block has a direct impact on the physico-chemical habitat characteristics. These characteristics include in-stream roughness elements, depth, velocity, turbidity, sediment transport and stream discharge. Altering these habitat characteristics can have impact on both in-stream biota and associated riparian habitat. The detrimental effects, if any, to biota resulting from bed material in case of river bed mining are caused by following:

- Alteration of flow patterns resulting from modification of the river bed
- An excess of suspended sediment
- Damage to riparian vegetation and in-stream habitat
- As no drainage line intercepts the mine, there will be no pumping of water either from the river or tapping the ground water. Mining will not intersect the river bed water level or ground water table of the area. So there will be no disturbance to the ground water environment.
- Since mining will be done only in central 3/4th portion of the river bed there will be no diversion or modification in the river flow. In the project, it is not proposed to divert or truncate any stream in case of river bed mining.

Mitigation Measures:

- Project activity will be carried out in the non-monsoon season and on dry bed. Hence, none of the project activities will affect the water environment directly.
- Mining will not be done in areas where there is water flow.
- Mining in the area will be done well above the water table which will minimize the impact on water regime. River bed mining will be done up to depth of 2.6 m from the un-mined bed level at any point in time with proper bench formation;
- The ultimate depth of mining in this case is 2.6m whereas the average groundwater depth is approximately 10-20m bgl. Thus water table is unlikely to be intersected and there will be no disturbance to the ground water environment

4.8 IMPACT ON AIR QUALITY

Information on air quality was studied and various modeling techniques predicted that the mining activity is not likely to affect the air quality in a significant manner. However, its transportation through unpaved roads

from the mine site to the nearest paved road may cause some deterioration in air quality in terms of fugitive dust from unpaved roads. In the present case, only wet materials will be handled, thus eliminating problems of fugitive dust due to loading and unloading of the materials. Also, the extraction and lifting of minerals will be done by semi-mechanized method without use of drilling and blasting. Therefore the process dust generated is likely to be insignificant as compared to mining processes involving drilling, blasting, mechanized loading etc.

FUGITIVE DUST- MODELING

The prediction of impact of fugitive dust from unpaved roads was done by using USEPA AP 42 Emission factors and an infinite line source model. From the figure 4.1 it can be observed that the mine site is connected to NH-86 by unpaved roads and metal road. From chapter 3 it can be seen that the number of 9 m^3 capacity trucks will be 324 per day assuming to and fro movement the total number of trucks will be 648. It is assumed that 324 trucks per day will move on each road per day. Air quality modeling was done using line *source model as published by USEPA "Workbook of Dispersion Modeling" by Turner*, for transportation though roads and the empirical emission factor equations from USEPA as follows:

$$E\ (lb/VMT) = \frac{k*(s/12)^a*(S/30)^d}{(M/0.5)^c} - C$$

Where,

E	size-specific emission factor (lb/VMT)
s	surface material silt content (%)
S	mean vehicle speed (mph)
M	surface material moisture content (%)
C	emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear
k,a,b,c,d	Empirical Constants

The derived emission rate by using above Equation is given in Table 4.3

Table 4- 3: Emission Rate

Parameters	Unit	Only for Proposed project		For Cluster	
		$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
Moisture content of the road, M	(%)	4.8	4.8	4.8	4.8
Mean Vehicle speed, S	(kmph)	25	25	25	25
Silt Content of Road, s	(%)	10	10	10	10
Frequency of vehicle movement	(nos./hr)	27	27	54	54
Emission	E (g/VKT)	19.25	193.37	19.25	193.37
Emission rate, q	g s^{-1} m^{-1}	0.00014	0.00145	0.0003	0.0029
Wind Speed, u	m/s	5	5	5	5

The equation for line source modeling used is as follows

$$\chi = \frac{2q}{\sqrt{(2\pi)*\sigma_z*u}}$$

Where,

χ	Concentration in g/m^3
σ_z	Vertical Dispersion Parameter in m
u	Wind speed m/s
q	E in g s^{-1} m^{-1}

From the model it is observed that the fugitive dust from each of the unpaved roads will decrease with respect to distance from the road assuming the worst case of wind blowing across the road. This prediction has been done for both uncontrolled and controlled situation by dust suppression with water at least two times a day. The predicted values with respect to distance is given below in Tables 4.4 and 4.5.

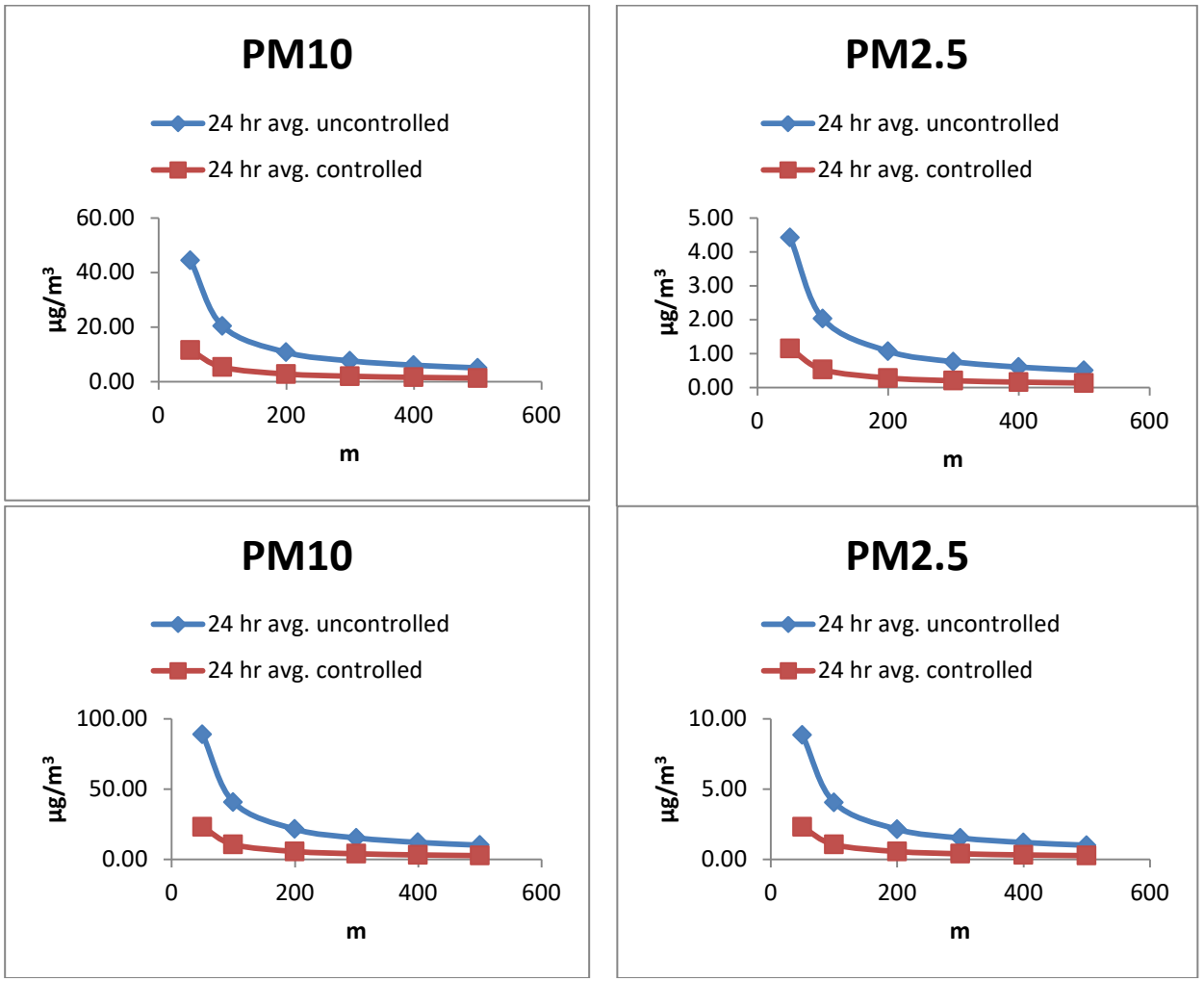

Figure 4.1: Graph for PM_{10} & PM 2.5 Concentration of Fugitive dust v/s Distance(Above) And for cluster (Below)

The details of concentration with respect of distance are given below Table 4.4:

Table 4- 4: Concentration of PM_{10} w.r.t distance

Concentration	Distance,	Only for Proposed project	For Cluster

	x (m)	24 hr avg. uncontrolled	24 hr avg. controlled	24 hr avg. uncontrolled	24 hr avg. controlled
Concentration; X in μg/m³	50	44.43	11.55	88.86	23.10
Concentration; X in μg/m³	100	20.33	5.29	40.66	10.57
Concentration; X in μg/m³	200	10.72	2.79	21.44	5.57
Concentration; X in μg/m³	300	7.61	1.98	15.21	3.96
Concentration; X in μg/m³	400	6.02	1.56	12.03	3.13
Concentration; X in μg/m³	500	5.03	1.31	10.07	2.62

Table 4- 5: Concentration of $PM_{2.5}$ w.r.t distance

Concentration	Distance, x (m)	Only for Proposed project		For Cluster	
		24 hr avg. uncontrolled	24 hr avg. controlled	24 hr avg. uncontrolled	24 hr avg. controlled
Concentration; X in μg/m³	50	4.42	1.15	8.85	2.30
Concentration; X in μg/m³	100	2.02	0.53	4.05	1.05
Concentration; X in μg/m³	200	1.07	0.28	2.13	0.55
Concentration; X in μg/m³	300	0.76	0.20	1.51	0.39
Concentration; X in μg/m³	400	0.60	0.16	1.20	0.31
Concentration; X in μg/m³	500	0.50	0.13	1.00	0.26

It is observed that the ground level concentration X (GLC) for PM_{10} decreases from 44.43 μg/m³ at 50 m from the centre line of the road to 5.03 μg/m³ at 500 m from the centre line of the road without any control measures for a dry unpaved road. However with control measures such as regular water sprinkling on the unpaved roads and covered transportation, the GLC for PM_{10} reduces to11.55 μg/m³ at 50 m and becomes almost negligible to 1.31 μg/m³ at 500 m from centre of the road.

Similarly for $PM_{2.5}$, the GLC reduces from 4.42 μg/m³ at 50 m for uncontrolled to 1.15 μg/m³ at 50 m for controlled. At 500 m, the $PM_{2.5}$ GLC varies from 0.50 μg/m³ for uncontrolled to 0.13 μg/m³ for controlled. Thus it can be concluded that with proper control measures, the pollution from transportation will be within the limits of NAAQ in case of cluster situation also which we show in table 4.4 and table 4.5.

Mitigation Measures:

The only air pollution sources are the road transport network of the trucks/dumpers. The dust suppression measures like the following will be resorted:

- Water sprinkling will be done on the roads regularly. This will reduce dust emission by 75%.
- Care will be taken to prevent spillage by covering the carrying vehicles with tarpaulin and sprinkling of water, if dry.
- Only PUC certified vehicles shall be deployed for the project. Proper tuning of vehicles along with pollution certificate to keep the gas emissions under check and installing automatic weighing machine at exit points.
- Overloading will be kept under check by giving prior awareness.

- Traffic management plan will help in avoiding any traffic jams and thus concentration of trucks at one place will be avoided.
- Plantation of trees along road sides as part of social forestry to help reduce the impact of dust in the nearby villages.
- Vegetation improves air by capturing pollution particles, reducing carbon dioxide and producing oxygen. Photosynthesis in green plant consumes carbon dioxide, plants help in counteracting the increase of this gas in the atmosphere. Thus planting of trees and shrubs for abatement of air pollution and improvement of environment is an effective way.
- Plants with dust scavenging capacity i.e. plants species which have aesthetic value and high pollution tolerance level will be recommended for planting along the roads.

4.9 IMPACT ON NOISE LEVEL

The major sources of noise pollution are vehicles transporting the mined out minerals. The trucks proposed to be used for transportation of minerals are anticipated to produce noise levels in the range of 80 - 85 dB(A). The material transportation road passes through the villages of Patyora and people in these places will be exposed to the increased noise levels. It may have negative environmental impacts on the sensitive receptors close to the project road. However as there will be about 324 trucks moving on the road due to the mines, the incremental noise level will be minimum.

Mitigation Measures:

- Periodical monitoring of noise near sensitive receptors will be done.
- No other equipments except the transportation vehicles will be allowed.
- PUC certified and well tuned vehicles will be used during operation phase and loud noise will be check out everyday which help in reducing noise during operations.
- Plantation will be taken up along the approach roads and vicinity of river bank. The plantation minimizes propagation of noise and also arrests dust.
- By reducing the speed and/or volume of traffic on such roads to an acceptably low level.
- No loud noise such as speakers will be allowed by workers and it should be checked regularly.

4.10 IMPACT ON TRAFFIC DENSITY

The information on traffic volume is an important input required for planning, analysis, design and operation of roadway systems. Level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by drivers/passengers. 6 LOS are recognized commonly, designated from A to F. Table 4.6 shows the relation between V/C ratio and LOS.

Table 4- 6: Relation between V/C ratio and LOS

V/C ratio	LOS	Performance
0.0-0.2	A	Represents a condition of free flow
0.2-0.4	B	Represents a zone of stable flow

0.4-0.6	C	The general level of comfort and convenience declines noticeably at this level
0.6-0.8	D	Represents the limit of stable flow
0.8-1.0	E	Represents operating conditions when traffic volumes are at or close to the capacity level

Source: IRC Guidelines 64-1990

The incremental traffic load during Mine Operation is given below.

Production per day	2915 m^3
Capacity of truck	9 m^3
Total trucks required (single trip)	324
Incremental PCU	1944

Table 4.7 shows the existing Level of Service (LOS) of the roads that will be used for transportation of the mined minerals.

Table 4- 7: Traffic Scenario after Mining Operation

Year	Traffic Volume in PCU/day (V)				PCU Standard for single lane Road (C)	PCU Standard for Double Lane Road (C)			V/C Ratio				LOS as per IRC			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
1st year	27	264	311	391	2000	15000	15000	15000	0.01	0.02	0.02	0.03	A	A	A	A
2nd year	29	282	333	418	2000	15000	15000	15000	0.01	0.02	0.02	0.03	A	A	A	A
Addition in 2nd year from the project	1944	1944	1944	1944	2000	15000	15000	15000	-	-	-	-				
2nd year	1973	2226	2277	2362	2000	15000	15000	15000	0.50	0.08	0.09	0.09	E	A	A	A

Source: IRC Guidelines 64-1990

From the above table it can be concluded that the incremental load on the carrying capacity of the concerned roads will change the LOS of the roads. For the single road connecting the site to NH-86, there is need for widening to double lane. However there is no requirement of any intervention for metal road as the LoS will remain A.

4.11 IMPACT DUE TO WASTE GENERATION

No construction activities are involved in the mining process therefore no major generation of solid waste is envisaged. Also as there is no top soil to be removed there is no scope of solid waste generation.

The only solid waste that will be generated is from the municipal solid waste by the workers hired for mining activities. Considering that there will be 180 workers in the project, the estimated municipal solid waste to be generated will be minimum.

Mitigation Measures:

- Dustbins will provide onsite and will be cleaned with proper management of food waste. compost pit will be constructed for disposal of food wastes.

- Mobile toilets will be made available on site.

4.12 IMPACT ON ECOLOGICAL ENVIRONMENT

4.12.1 IMPACT ON FLORA

- As it is a river bed mining project, activities will be confined to core zone only. Thus no direct impact is foreseen on the flora of the forested area because of mining, whereas activities related to mining as transportation of minerals and passage of workers to and fro from mining area will have an adverse impact on the road side flora.
- Fugitive emission from vehicle movement will form a layer in leaves thus reducing the gaseous exchange process. This ultimately affects the growth of plants.
- The new linear surface creates a new microclimate and a change in other physical conditions which may extend to varying distances from the road edge. Plant mortality and biological community may extend this along the edge and such mortalities may extend from the road edge for varying distances.
- Emissions, litter, noise and other physical disturbances may extend into road side vegetation for varying distances and result in changes in species composition.

Mitigation Measures:

- Plantation will be carried out on approach roads and nearby vicinity at river banks areas.
- Native plant species which are stress and pollution tolerant and comparatively well acclimatized should be grown along roadsides. For selection of plant species it is necessary to consider certain factors as agro-climatic suitability, height and canopy architecture, growth rate and habit and aesthetic effect (foliage, conspicuous and attractive flower color). The plants selected should be hardy so as to withstand severe climatic conditions and should not use much of irrigation.
- Annual bio-monitoring of roadside plants exposed to vehicular pollution will be done to check the dust load and Air Pollution Tolerance Index (APTI).

4.12.2 IMPACT ON FAUNA

- The mining, specifically, will have no adverse impact on fauna whereas the operational activities such as population influx, transportation and noise generation may have an adverse impact on fauna.
- Chances of vehicle collisions with wildlife attempting to cross roads are possible.
- Loud sounds generated by human activities and transportation may have an adverse impact on terrestrial fauna and avifauna.
- The use of roadside habitats by animals that communicate using acoustic signals, such as birds, presents an interesting tradeoff between the presence of suitable habitat and the potentially detrimental effects of traffic noise and passing vehicles on survival rates, and breeding success.
- Some fauna will move from the area of the road side as a result of habitat loss and physical disturbance.

- Indiscriminate mining from active channels of rivers causes many adverse effects on the benthic fauna, which inhabits the bottom sandy substratum. Excessive sand extraction from rivers affects the eco-biology of many terrestrial insects whose initial life history begins in aquatic environments.
- In the fisheries point of view, loss of food in the form of benthic invertebrates is a major negative impact which will ultimately end up in the decline of inland fishery resource of the area.

Mitigation Measures:

- To the extent practicable, the right-of-way (ROW) to avoid residential areas and important wildlife habitat areas (e.g., rookeries, raptor nesting areas, and calving areas) will be provided.
- All equipment should have sound-control devices no less effective than those provided on the original equipment. Motorized equipment used should be adequately muffled and maintained.
- Use of exhaust silencers and optimized acoustical pipe lagging (acoustical wrapping) to minimize compressor noise.
- A strict monitoring of the mining activity is utmost essential for reviving the health of the river ecosystem and in turn aquatic biology will be benefited.
- No mining will be carried out during the rainy season to minimize impact on aquatic life.
- Sand extraction in vegetated riparian areas will be avoided.
- Undercut and incised vegetated banks will not be altered.
- Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- Sand stockpiles and/or vegetative debris will not be stored within the riparian zone.
- It is essential that the spillage generated is evenly redistributed over mined voids as soon as possible after the operation has been completed.
- Operation and storage of heavy equipment within riparian habitat will be restricted.
- Access roads will not encroach into the riparian zones
- The removal or disturbance of in-stream roughness elements during mineral extraction activities will be avoided and those that are disturbed will be replaced or restored.

4.13 IMPACT ON SOCIO-ECONOMIC ASPECT

4.13.1 IMPACT ON SOCIAL ASPECT

- The area is considered as industrially backward. The population in general does not have opportunities of earning from employment. The only employment to depend on is agriculture, which is seasonal.
- In the absence of any high employment potential activities, the people are economically backward. The mining operations will provide employment opportunities to the persons of nearby areas.
- The various indirect employment opportunities will also be generated. Several persons of the neighboring villages will be benefited with contract works, employment through contractors, running of jeeps, trucks, tractors, water tankers and bullock carts on hire, and transport related business avenues.

4.13.2 IMPACT ON HEALTH

- Extraction from riverbanks and beds and the resultant generation of fugitive dust cause workers of the mine to suffer from occupational hazards like skin allergies, eye and respiratory problems etc.
- Further, the deep pits created in the channel also can contribute to an increase in accidents in the working environment. This creates serious threat to residents in the area who depend on river water for their domestic purposes.
- The major source of socio-health impacts of transportation will stem from truck fumes, dust generation and movement. Increase in accidents as a result of rash driving of dumpers carrying minerals through the roads may be a possibility.

Mitigation Measures:

- In each of the areas of impact, measures have to be taken to reduce potentially significant adverse impacts and where these are beneficial in nature, such impacts are to be enhanced/augmented so that the overall adverse impacts are reduced to as low level as possible.
- It has to be ensured that all the workers are recruited locally so as to generate employment in the area.
- Welfare activities should be initiated in the area so as to improve the quality of life of the local people.

CHAPTER-5

5. ANALYSIS OF ALTERNATIVES

5.1 INTRODUCTION

The procedure of an EIA process needs to consider feasible alternatives for any proposed development. Therefore it is required that a number of possible proposals or alternatives for accomplishing the same objectives be considered. The alternatives under consideration in this EIA include the location alternatives, process options, and strategic alternatives.

5.2 ALTERNATIVES OF SITE

Mining of minerals is site specific in nature and the location of the proposed project is restricted to the geology and mineral deposition of the area. Safety, economical and technical constraints determine the mining methods to be employed. Unlike other industries, the project cannot be shifted to other sites.

5.3 ALTERNATIVE MINING METHOD

Mining is the extraction of valuable minerals or other geological materials from the earth or river bed. There are three methods of mining; conventional or manual mining, semi mechanized mining and mechanized mining for removal of soil and sand.

The mining process for the present project shall be opencast Semi-mechanized mining method. No drilling & blasting is required as hard rock is not encountered in sand mining which helps the environment and ecology of the area. Sand/Morrum shall be exploited with deployment of scrapper / excavator which can excavate riverbed materials in bulk. The river-bed materials shall be exploited by forming benches. No waste shall be generated during the 5year plan period as entire material is saleable. The material excavated will be directly transferred to the nearby market by loading through scrapers on trucks, tractor, tippers.

CHAPTER-6

6. ENVIRONMENT MONITORING PROGRAMME

6.1 PURPOSE OF EMP

Regular monitoring of the various environmental parameters is necessary to evaluate the effectiveness of the mitigation plans so that the necessary corrective measures can be taken in case there are some drawbacks in the proposed project. Since environmental quality parameters at work zone and surrounding areas are important for maintaining sound operating practices of the project in line with conformity with environmental regulations, the post project monitoring work forms part of Environmental Monitoring Programme.

The Environment Monitoring Programme is required to ensure sustainable development in the region adjoining the project, hence it needs to be an all-encompassing plan for which the mine operators, government, regulating agencies like State Pollution Control Board, MoEF&CC, etc. working in the region and more importantly the affected population of the study area need to extend their co-operation and contribution.

6.2 MONITORING PLAN FOR ENVIRONMENT CONDITION

Environment monitoring will be outsourced to NABL/MoEF&CC approved laboratories. This will be overseen by monitoring team of a multi-disciplinary team headed by a senior executive reporting to head of the mines. The monitoring team shall be responsible for planning, execution and monitoring of all aspects of the environment, starting from start to closure of mines. The said team will be responsible for:

- Collecting water and air samples, to monitor air and water;
- Analysing the water and air samples;
- Implementing the control and protective measures;
- Coordinating the environmental environment related activities within the project as well as with outside agencies;
- Collecting statistics of health of workers;
- Green belt development and inventory of flora;
- Monitoring the progress of implementation of environmental management programme;
- Liaisoning with statutory authorities; and
- Management of drainage system, dumps, reclamation and restoration etc.

The organizational set-up for Environment Management Cell is described in Figure 6.1.

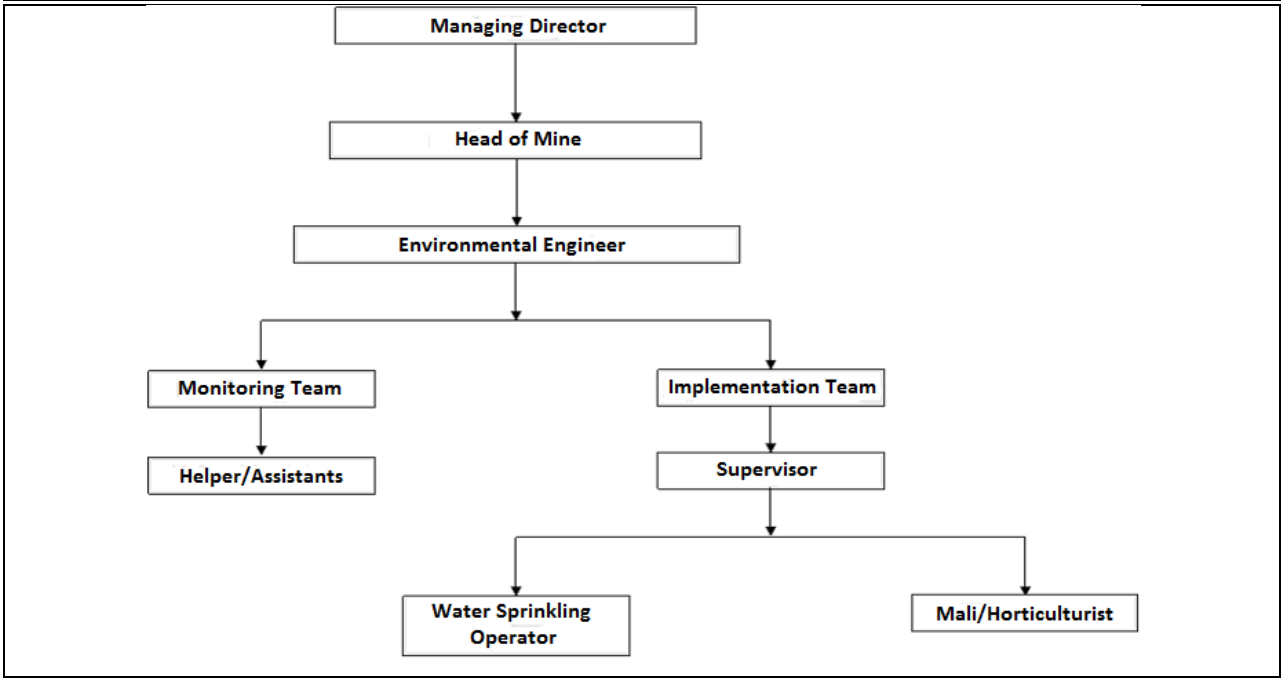

Figure 6.1: Organizational Set-up for Environment Management Cells

6.2.1 Monitoring Schedule And Parameters

To evaluate the effectiveness of environment mitigation programme, regular monitoring of the important environmental parameters will be taken up. The schedule, duration, and parameters to be monitored are shown in Table 6.1.

Table 6- 1: Monitoring Schedule and Parameters

Sl. No.	Description of Parameters	Schedule and Duration of Monitoring
1	Air Quality (PM_{10}, $PM_{2.5}$, SO_2, NO_2) monitoring in four locations • Two monitoring station in up-wind direction • Two in down-wind direction in consultation with SPCB	Will be monitored in every quarter as per norms laid down under MCDR 1988 and DGMS norms.
2	Quality of surface and ground water around the site will be collected from 5 locations (Surface water-2, Ground Water-3) in consultation with SPCB, out of which one should be near the active working area	Will be monitored in every quarter as per norms laid down under MCDR 1988 and DGMS norms
3	Ambient Noise Level monitoring at 2 locations in consultation with SPCB	Will be monitored in every quarter as per norms laid down under MCDR 1988 and DGMS norms
4	Inventory of flora to judge the comparative status will be done in the nearest forest	Once in 2 years
5	Soil quality in three locations	Twice in a year in reclaimed land
6	Biological • Green Belt development • Block Plantation	Every 6 months by a core group formed from management and plantation executing agency

6.2.2 Budgetary Provision For Environment Protection

Adequate budgetary provisions have been made by the company for execution of the EMP. Table 6.2 gives the overall investment on the environmental safeguards and recurring expenditure for monitoring and implementation of control measures including reclamation.

Table 6- 2: Capital Investment including Environment Protection

Sl. No.	Component	Type of Analysis	No. of Locations	Frequency	Total no. of Samples annually	Cost per Sample (Rs.)	Total Cost (Rs.)
1	AAQ	PM concentration	4	4 times per year	16	20,000	3,20,000
		Gaseous concentration	4	4 times per year	16	10,000	1,60,00
2	Water	Surface water	2	4 times per year	8	23,000	1,84,000
		Ground water	3	4 times per year	12	19,000	2,28,000
3	Noise	Noise Pressure Level	2	4 times per year	8	10,000	80,000
4	Soil	Physical, chemical parameters with organic content	3	2 times per year	6	12,000	72,000
5	Ecology	Flora and fauna	10 km from the project site	2 times per year	2	25,000	50,000
	TOTAL						10,94,000

**The annual recurring cost as given in the table has been proposed for 5 years.*

6.2.3 Data Analysis

Monitoring data analysis will be done as per CPCB guidelines by NABL/MoEF&CC approved laboratory and shall be submitted to concerned authority (as specified in Environment Clearance Letter issued by SEIAA and Consent issued by SPCB) on regular basis.

CHAPTER-7

7 ADDITIONAL STUDIES

7.1 INTRODUCTION

Each and every project is prescribed with certain additional studies as suggested by the State Level Expert Appraisal Committee in the Terms of Reference given by them to carry out EIA/EMP Report. The studies suggested for Patyora sand/morrum mine is as follows:

- Public Hearing & Consultation
- Risk Assessment and Disaster Management Plan

7.2 PUBLIC HEARING AND CONSULTATION

As per the conditions of the TOR and the EIA Notification 2006, public consultation will be held for the project. "Public Consultation" refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental impacts of the project or activity are ascertained with a view to taking into account all environmental concerns in the project or activity design as appropriate. Public consultation process comprises of two parts, viz Public Hearing and written response from stakeholders.

The Public Hearing was arranged in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site(s) or in its close proximity District-wise, by the concerned State Pollution Control Board (SPCB). The EIA report will be submitted to the State Pollution Control Board along with other relevant documents and additional studies.

On dated 28/11/2019 the Public Hearing was conduced under chairmanship of Additional District Magistrate - Hamirpur in the Tehsil Sabhagar Office of Sadar Tehsil in district Hamirpur.

The Public Hearing was chaired by the following members:-

1. Shri – Vinay Prakash Srivastava – Additional District Magistrate, Banda
2. Dr. Madhavi Kamalvanshi – U.P.P.C.B. –Banda
3. Shri JItendra Singh , Mining Inspector , Hamirpur
4. Shri Raj Karan Verma – U.P.P.C.B. - Banda
5. Shri Suraj Dubey - Consultant , GreencIndia Consulting Pvt. Ltd. Ghaziabad

The queries as raised and mitigation measures suggested are given in the following table:

Question / Query / Suggestion raised in Public Hearing	Answer / Mitigation Measures Suggested
Shri Arvind Singh questioned the actual minable quantity available in the Lease and agriculture land of village should not be disturbed	Consultant Shri Suraj Dubey informed that lease will be operated after proper "Seemankan" (i.e. Lease Demarcation) and mining will not be done beyond sanctioned limits and no agriculture land shall be disturbed.
Shri Naresh Kumar of village Patyora submitted a	Consultant Shri Suraj Dubey informed that lease

written letter suggesting that lease was granted on 2018 and current minable quantities should be re-verified before execution of lease.	was granted on 2018 and informed that such matter will be put-up before competent Committee for discussion and solution.
Shri Ram Prasad informed that mining leads to dust emission and effects crop and water is not sprinkled properly.	Consultant Shri Suraj Dubey informed that water sprinkling will be done time to time to avoid dust emission on commencement of lease.

Public Hearing Photographs are attached below:

7.3 RISK ASSESSMENT

All types of industries face certain types of hazards which can disrupt normal activities abruptly. Similarly Riverbed mines also have risks which need to be addressed for which a disaster management plan has been formulated with an aim of taking precautionary steps to avert disasters and also take such action after disaster which limits the damage to minimum. In the sections below, the identification of various hazards, probable risks during the operational phase of the mining, maximum credible accident analysis and consequence analysis are addressed either qualitatively or quantitatively.

Risk assessments will help mine operators to identify high, medium and low risk levels. This is a requirement of the Occupational Health and Safety Act 2000. Risk assessments will help to priorities the risks and provide information on the need to safely control the risks. In this way, mine owners and operators will be able to implement safety improvements. The following natural/industrial problems may be encountered during the mining operation.

- Inundation: filling of the mine pit due to excessive rains or upstream dam opening or failure.
- Slope failures at the mine faces or stacks

As per proposal made under the mining plan the area will be developed by means of opencast mining method. Extraction of minerals is to be carried out by semi-mechanized mining means. Water table will not be touched during the mining process. No high risk accidents like landslides, subsidence flood etc have been apprehended.

7.3.1 Risks Due To Inundation

Mining will be done during the non-monsoon periods (October-June); therefore problem of inundation is not likely to happen except in case of accidental flash flood due to upstream dam opening or failure. Communication channels will be opened with government departments to give early warning in such situations and the workers will be immediately taken out.

7.3.2 Risks Due To Failure of Pit Slope

In order to allay dangers due to open cast slope failure, final pit slope stability estimations will be made for the existing mines. Determining the factor of safety, the slopes shall be monitored at regular intervals to check for any possible failure.

7.3.3 Risks Due To Failure of Waste Dumps

No waste will be generated during the 5 year plan period and thus there will be no waste dump during mining. The entire river-bed material will be transported to the end user. However, mined sand may be stored temporarily before transportation and stacks may be formed. Slopes of stacks may fail.

7.3.4 Risks of Accidents Due to Trucks and Dumpers

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads and
- Time pressure
- Inadequate brakes (possibly from lack of maintenance),
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Unsafe coupling and uncoupling of trailers, and
- Untrained drivers.
- Overturning vehicles

To avoid such instances we will talk to the workers and their representatives and will involve them in the risk assessment process and tell them what to do, to reduce risk. All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Road signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/ spotting operating.
- Trained drivers will only be hired.

7.4 DISASTER MANAGEMENT

The possible risks in the case of river bed mining project are high risk accidents like landslides, subsidence, flood, inundation in underground mines, fire, seismic activities, tailing dam failures etc. and emergency plan

proposed for quick evacuation, ameliorative measures to be taken etc. Mining and allied activities are associated with several potential hazards to both the employees and public at large. A worker in a mine should be able to work under adequately safe and healthy condition. This is possible only when there is adequate safety in mines. Safety of the mine and the employees is taken care of by the Mining Rules & Regulations, which are well defined with laid down procedure for safety, which when scrupulously followed safety is ensured not only to manpower but also to machines & working environment.

The capability of lessee to meet such eventualities and the assistance to be required from the local authorities should be described.

- The shallow depth of activities in river bed mining will not involve any high risk accident due to side falls/collapse.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, RMMCR 1986 and other laws applicable to mine will strictly be complied with.
- During heavy rainfall the mining activities will be closed.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided first aid kits which they will always carry.

7.4.1 Identification of Hazards

There are various factors, which can create disaster in sand mine. These risks are as follows:

a) Inundation / Flooding.
b) Quick Sand Condition.
c) Drowning.
d) Due to vehicular movement.
e) During sand loading, transporting and dumping.

7.4.2 Sand Loading

The sand is loaded in the trucks using hand shovels and back-hoe. There are possibilities of injury in the hands during loading with shovels and staying under bucket movement.

- There are possibilities that the workers standing on the other side of loading may get injured due to overthrown sands with pebbles.
- There are possibilities of workers getting injured during opening of side covers of the trucks to facilitate and loading.
- There are possibilities of river-bank collapse due to close proximity of sand extraction.
- Chance of workers getting injured due to improper balancing of truck while loading.

7.4.3 Sand Transport

The sands loaded in 9 Tons trucks are being sent through public roads.

- Road accidents are possible.
- Accident may also occur during movement in the mine (sand dunes).
- There are possibilities that due to overloading, some pebbles or big boulder may injure the passerby.

7.4.4 Sand Dumping and Storage

- There are possibilities of the trucks rolling/ sliding down the sand bunker during dumping operation.
- The dumper /trucks may cause injury to the workers working near the stowing plant.
- Dumping the sand in an empty sand bunker may cause injury to the stowing operator.

7.4.5 Heavy Machinery

Most of the accidents occur during transportation by dumpers, trucks and other heavy vehicles and are often attributable to mechanical failures, in which the factor of human errors cannot be ruled out.

7.4.6 Inundation / Flooding

- The possibility of inundation/flooding of the sand mines are very high during monsoon or during heavy rains in lean season or due to upstream dam opening or failure as the mine area lies over the sand dunes of a riverbed.
- There are dangers to the trucks and other machineries due to flooding.
- There are dangers to the workers working in the sand dunes. Inundation or flooding is expected and beneficial for these sand mines as during this time only the sand reserve gets replenished.

7.4.7 Drowning

There are possibilities of drowning in the deeper part of the river or left out pits full with water. However, safety jackets, floating tube will be kept at the site office to prevent any mishap.

7.4.8 Mitigation of Hazards

7.4.8.1 Measures to Prevent Accidents during Sand Loading

- The trucks will be brought to a level so that the sand loading operation suits to the ergonomic condition of the workers and the back-hoe.
- The loading will be done from one side of the truck only.
- The workers will be provided with gloves and safety shoes during loading.
- Opening of the side covers (pattas) will be done carefully and with warning to prevent injury to the loaders.
- No sand will be collected within 7.5m from bank, especially from outer bank of the meandering river. Safe clearance will be mainly determined by the height of the river bank and thickness of sand to be extracted from the close vicinity of that bank.
- Ponding in the river bed shall not be allowed.
- Operations during daylight only.
- No foreign material (garbage's) will be allowed to remain/spill in river bed and catchment area, or no
- Pits/pockets are allowed to be filled with such material.

- Stockpiling of harvested sand on the river bank will be avoided.
- For particular operations, approaching river bed from both the banks will be avoided.

7.4.8.2 Measures to Prevent Accidents during Sand Transportation

- All transportation within the main working will be carried out directly under the supervision and control of the management.
- The Vehicles must be maintained in good repairs and checked thoroughly at least once a week by the competent person authorized for the purpose by the Management.
- Road signs will be provided at each and every turning point especially for the guidance of the drivers at the evening/night.
- To avoid danger while reversing the trackless vehicles especially at the embankment and tipping points, all workers will be removed from all areas for reversing of lorries, and the vehicle will have audio-visual alarm during reversing.
- A statutory provision of the fences, constant education, training etc. will go along way in reducing the incidents of such accidents.
- Generally, overloading will not be permitted. Big boulders will not be loaded. This is unsafe and may damage equipment and stowing bunker.
- The truck will be covered and maintained to prevent any spillage.
- The maximum permissible speed limit will be ensured.
- The truck drivers will have proper driving license.

7.4.8.3 Safety Features Required in Tippers/Trucks

- Exhaust/ Retard Brake: Required as per DGMS circular 02 of 2004.
- Propeller shaft guard: Propeller shaft guard as per DGMS circular 10 of 1999.
- Tail gate protection: Protection of cabin against collision either by head to head or head to tail.
- Limiting speed device: To ensure speed limits as decided by management. The device may be Electronic or mechanical type speed governors.
- Reverse gear for audio-visual alarm: The audio-visual alarm provided for equipments will confirm to DGMS (Tech.) Tests to be carried out on the audio-visual alarm and certificates shall be issued to user industries.
- Provision of two brakes: One of brakes shall be fail safe and for details refer DGMS circular 09 of 1999.
- Body lifting position locking arrangement: A hooter along with an indication may be provided to show the body is lifted.
- Fire suppression System: Semi-automatic fire suppression system. For details refer DGMS circular 10 of 2004. The fire suppression system shall be a factory fitment.
- Blind spot mirror: Better view of front blind spot by operator.
- Retro reflective reflectors on all sides: For visibility of truck during night

- Seat belt reminder: To alert operator for using the seat belt
- Proximity warning device: To alert operator
- Rear Vision System: For assisting operator to have back view during reversing
- Auto dipping System: To reduce glaring of eyes of operator during night
- Load Indicator and Recorder: Enables management to detect and prevent over loading.
- Global Positioning system: To prevent illegal transport and selling of sand, restricting short-cut routes other than stipulated routes and computerized monitoring. It is the responsibility of the Project Proponent to mention these terms and conditions in the tender document.

7.4.8.4 Measures to Prevent Accidents during Sand Dumping and Storage

- The stowing sand bunkers will be covered by steel grizzly (netting) to prevent inadvertent fall of human being or the vehicles during dumping operation.
- The dumping will be done only when the chute of the sand bunker is in closed condition or partially filled.
- The vehicles/trucks will not be brought over the grizzly.
- There will be a duly constructed berm made up of concrete or other material to prevent the rear wheels come/roll over the grizzly of sand bunker.
- Dozers are used near the sand bunkers to maintain the safety bern and to push material over the edge as required.
- The dumping operation will be done under strict supervision.

7.4.8.5 Measures to Prevent Accidents due to Trucks/ Dumpers etc.

- All transportation within applied mining lease working will be carried out directly under the supervision and control of the management.
- The vehicles will be maintained in good condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Road signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the equipment's/ vehicles especially at the working place / loading points, stopper will be posted to properly guide reversing/ spotting operating, otherwise no person will be there within 10 Km radius of machine
- A statutory provision of the fences, constant education, training etc. will go a long way in reducing the incidents of such accidents.
- Regular training will be provided to the operators by the Company or the Contractors.

7.4.8.6 Measures to Prevent Dangerous Incidents during Inundation/Flooding

- Inundation or flooding is expected and beneficial for these sand mines as during this time only the sand reserve gets replenished.
- During monsoon months and heavy rains the sand mining operations are ceased.
- The Trucks and other vehicle plying over the dunes will be kept on the river banks beyond HFL.

- The workers are not allowed to go over the dunes during heavy rains.
- There will be mechanism/warning system of heavy rains and discharges from the upstream dams, if any.

7.4.9 Measures to Prevent Drowning

- The sand mining will be done under strict supervision.
- The workers are not allowed to go to the deeper areas of the rivers.
- The workers are not allowed to fish in the river during working hours.
- In case it is required to cross the river, it is done under strict supervision and over the shallow area using life lines.
- Few life jackets, inflated tubes will be kept near the mine site.

7.4.9.1 Training and Human Resources Development

- Appointment and delegating qualified and experienced personnel in various disciplines.
- Adequate training/refresher training will be provided to the supervisors, workers keeping in view
- provisions of Mines Vocational Training Rules, 1966; Mine Rules, 1955, Mines Rescue Rules, 1985.
- Personnel who have to operate and maintain HEMM, Trucks etc are to be trained under the guidance of the manufacturers and as per provisions of DGMS Circular Technical 1/1989 regarding accidents in opencast mines. Recommendation of Seventh Conference on Safety in Mines on “Safety in Open Cast Mining”, “Traffic Rules and Procedures”, “Mobile equipments and Highway Delivery Vehicles”, “Operations and Operator Training” and other related circulars.
- The training of mine personnel shall be provided regularly with respect to environmental protection.
- Special courses for employees will be arranged for afforestation, re-vegetation, reclamation, health hazards (identification), malaria eradication, HIV prevention etc in the training centre of the company

7.5 OCCUPATIONAL HEALTH HAZARDS

Dry-pit mining by open cast method involves dust generation by excavation, loading and transportation of mineral. At site, during excavation and loading activity, dust is main pollutant which affects the health of workers whereas environmental and climatic conditions also generate the health problems. Addressing the occupational health hazard means gaining an understanding of the source (its location and magnitude or concentration), identifying an exposure pathway (*e.g.* a means to get it in contact with someone), and determination of likely a receptor (someone receiving the stuff that is migrating). Occupational hazard due to sand mining mainly comes under the physical hazards. Possible physical hazards are as below mention:

7.5.1 Physical Hazards Due To Mining Operations

Following health related hazards were indentified due to riverbed sand mining operations to the workers:

a) Light: The workers may be exposed to the risk of poor illumination or excessive brightness. The effects are eye strain, headache, eye pain and lachrymation, congestion around the cornea and eye fatigue.

b) Heat and Humidity: The most common physical hazard is heat. The direct effects of heat exposure are burns, heat exhaustion, heat stroke and heat cramps; the indirect effects are decreased

efficiency, increased fatigue and enhanced accident rates. Heat and humidity are encountered in hot and humid condition when temperatures and air temperatures increase in summer time up to 48^0C or above in the river bed mining area.

c) Eye Irritation: During the high windy days in summer the sand could be the problems for eyes like itching and watering of eyes.

d) Respiratory Problems: Large amounts of dust in air can be a health hazard, exacerbating respiratory disorders such as asthma and irritating the lungs and bronchial passages.

e) Noise Induced Hearing Loss: Machinery is the main source of noise pollution at the mine site.

7.5.2 Medical Examination Schedule

To minimize the health impacts PPE like dust masks, ear plugs/ muffs and other equipments will be provided for use by the work personnel. All workers will be subjected to Initial Medical Examination as per Mines Rule 1955 at the time of appointment. Periodical Medical Examination will be conducted at least once in five years. Medical camps will be organized.

CHAPTER-8

8. PROJECT BENEFITS

8.1 INTRODUCTION

The proposed project is expected to provide employment to local people in different activities such as mining, sizing, transportation and plantation activities. The project activity will not have any major impact on the environment. Also the company's Corporate Social Responsibility initiatives will have a positive impact on socio economic fabric of the region. The opening of the proposed project will enhance the socio-economic activities in the adjoining area. This will result in following benefits-

- Improvements in physical infrastructure;
- Improvements in social infrastructure;
- Increase in employment potential;
- Prevention of illegal mining;
- Enhancement of green cover;

8.1.1 IMPROVEMENTS IN PHYSICAL INFRASTRUCTURE

The opening of the project will improve the physical infrastructure of the adjoining areas. This will include the following-

- Improved road communication due to opening of the proposed project;
- Strengthening of existing community facilities through the Community Development Program;
- Creation of community assets (infrastructure) like provision for drinking water, village roads/linked roads, market place etc;
- Literacy program, adult education, assists formation of Village Working Group (VWG), Mahila Mandal, etc;
- Awareness program and community activities, like health camps, medical aids, family welfare programs, immunization camp, sports & cultural activities, plantation etc;

8.1.2 IMPROVEMENTS IN SOCIAL INFRASTRUCTURE

There will be some obvious changes in various environmental parameters due to mining activity. Increase socio-economic activities, creation of new employment opportunities, infra-structural development, better educational and health facilities.

8.1.3 EMPLOYMENT POTENTIAL

As mentioned earlier, the people of this area are dependent only on agriculture and find it difficult to sustain their livelihood, mainly due to climatic extremities in the region. It has been estimated that there will be about sixty people who will get employment from the project. Out of this, the unskilled and semi-skilled workers will be preferably recruited from local area. Other than that there will be indirect employment in the form of security, shop-keepers, etc.

8.2 TANGIBLE SOCIAL BENEFITS

There will be positive impact on socio-economic area due to increased economic activities, creation of new employment opportunities, infrastructural development and better educational and health facilities.

Health: Company will undertake awareness program and community activities like health, camps, medical aids, family welfare camps, AIDS awareness program for truckers, etc. Periodic medical check-ups as per Mines Act/ Rules and other social development and promotional activities will be undertaken. All this will assist to lift the general health status of the residents of the area around mines.

Plantation: A massive plantation has been done in the mine area so far and lot many are proposed to mitigate the ill-effects of mining and to improve the vicinity and environment of mine and it surrounding area. The management will give emphasis on plantation and will also motivate local persons for plantation during rainy season. This will also increase the consciousness in workers and near-by villagers for greenery. Fruit trees can contribute towards their financial gains.

8.3 OTHER BENEFITS

The project will meet the demand of minor minerals for construction activities in nearby areas where the mined minerals will be sent. The project will contribute to the economy and social development of the area. It will provide direct employment to more than 180 people and indirect employment to many more. The Proponent by providing employment to so many people helps in socio-economic upliftment of the region. Transportation facility and awareness in the region will improve considerably and socioeconomic status of the region will definitely improve. This will become a source of livelihood to the households of nearby villages. Hence the mining activity will contribute a lot to improve the living standards of the local people. Initiation of this mining will also contribute for sustainable use of mineral resources also. Moreover, the proponent will take up development activities as part of CER in nearby villages of the study area.

Apart from all the above-mentioned benefits there will be other benefits to the region in terms of up gradation of lifestyle, overall area development etc.

CHAPTER-9

9. ENVIRONMENT MANAGEMENT PLAN

9.1 INTRODUCTION

Success of any environmental management program depends upon the efficiency of the organizational set up responsible for the implementation of the program. The environmental management must be integrated into the process of mine planning so that ecological balance of the area is maintained and adverse effects are minimized. An Environment Management Plan (EMP) is a site specific plan developed to ensure that the project is implemented in an environmentally sustainable manner. An effective EMP should ensure the application of best practice environment management to a project. The purpose of an EMP is to:

- Assist Management to perform mining operations in an environmental friendly way.
- Improve the contribution of Management so that an EMP can be used effectively.
- Ensure a minimum standard and consistent approach to the implementation of EMP.
- Ensure that the commitments made as part of the project's EIA are implemented throughout the project life, and
- Ensure that environment management detail is captured and documented at all stages of a project.

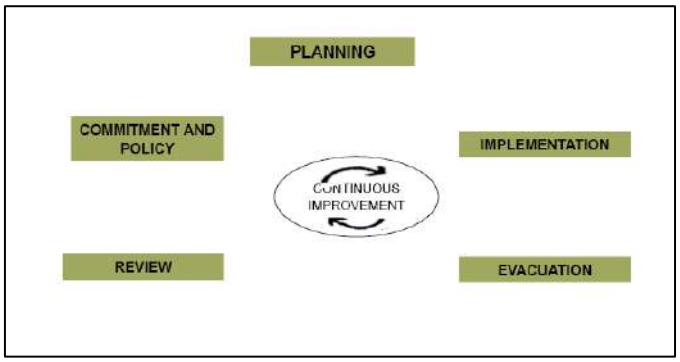

Fig: 9.1 Flow Chart Of EMP

9.2 COMPONENTS OF ENVIROMENT MANAGEMENT PLAN

As it is a minor mineral mining project Environmental Management Plan has been dealt only for operational phase as no construction is involved. The design of EMP for operational phase has been aimed to achieve the following objectives:

- To ensure adoption of state of art technological environmental control measures and implementing them satisfactorily.
- Effectiveness of managing mitigatory measures in mitigation of impacts.
- Implementation of monitoring program of the surrounding environment.
- Institution arrangements to monitor effectively and take suitable corrective steps for implementation of project.
- Implementation of schedule and reporting procedures.

9.3 COMPONENTS OF ENVIROMENT MANAGEMENT PLAN

As it is a river bed mining project it does not involve construction of any permanent structure. However,structures like shelters for workers, mobile toilets and site office etc. will be constructed which should be temporary in nature.

9.4 ENVIRONMENT MANAGEMENT PLAN: OPERATION

The action plan for mitigation of the environment impact due to the mining activities and the implementing agency is provided in Table 9.1.

Issue	Management Action	Implementation Responsibility
Air pollution	• Spraying of water at source of dust emissions. • Trucks carrying sand will be duly covered with tarpaulin to avoid spilling. • Regular monitoring would be carried out.	Consultant/Mine Operator
Noise pollution	• Identification of structures and population vulnerable to noise level increase and remedial measures. • Tree corridor along the roads helps in minimizing the noise level.	Consultant / Mine Operator
Water Pollution	• Mining in the area will be done well above the water table as well as river bed water level which will minimize the impact on water regime.	Consultant / Mine Operator
Solid waste generation	• Solid waste (boulders, clay & silt) that will be generated during mining activities will be utilized for shore management.	Consultant / Mine Operator
Tree Plantation	During the mining activities, plantation will be done for two specific reasons. • Plantation to reduce noise impact • Plantation to absorb air pollutant. Selection of plant species is to be done on the basis of their adaptability to the existing geographical conditions and the vegetation composition of the topography of the region	Consultant / Mine Operator

9.4.1 ORGANIZATION CHART FOR EMP:

An organization chart of Environmental Management Cell (EMC) is prepared with a core group only for environment management and a supporting group from allied disciplines and area of activities. This supporting group would consist of members of top management while core group shall have experts from mining, geology, environmental scientists, horticulture/forestry and laboratory. This is shown as Figure 9.2.

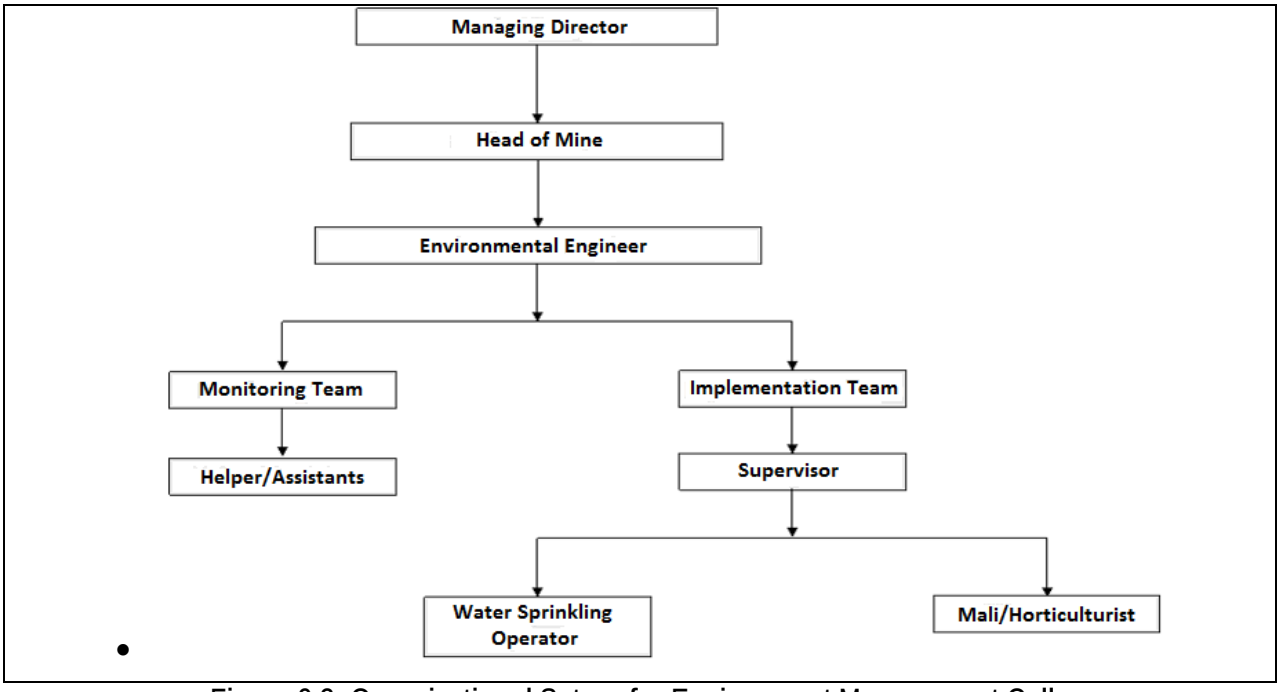

Figure 9.2: Organizational Set-up for Environment Management Cells

9.4.2 SPECIFIC ISSUES TO BE TAKEN UP FOR EMP

9.4.2.1 SOIL QUALITY

Frequent movement of trucks over unpaved roads may lead to compaction of soil thereby leading to reduced infiltration rate triggering reduced growth of deep rooted plants. The project will involve movement of vehicles along paved roads. The roads leading to the mine site are already constructed. Those that are partly paved will be strengthened to reduce impact on soil quality. The vehicles moving to and from the site will be regularly checked to prevent oil leakage.

9.4.2.2 AIR QUALITY

In river bed mining activities, the only source of gaseous emission is the fugitive dust generation during mining, the engines of vehicles using for excavation and transporting of the mined materials. To manage the air quality, air quality monitoring on regular basis will be done. Air quality monitoring is done for parameters such as Particulate Matter (PM10 & PM2.5), Sulphur dioxide (SO_2), Nitrogen dioxide (NO_2) and Carbon Monoxide (CO). The following implementation mechanism will be adopted to reduce emission of air pollutants as far as possible.

- Use of dust screens and water sprinklers during operation of mining to prevent gusting dust.

- Regular water sprinkling in the mining area, roads and stockpiles will be done to prevent dust emissions. Use of dust masks for workers in dust prone areas.
- Plantation will be carried out on approach roads and nearby vicinity of river bank.
- To control the emissions regular preventive maintenances of vehicles will be done and all transportation vehicles will carry a valid PUC certificate.
- No overloading of vehicles to be allowed to avoid any spillages.
- Transportation of mineral will be done in trucks covered with Tarpaulin to avoid fugitive dust emissions.

1. Control of Gaseous Pollution

In mining activities, the only source of gaseous emissions is from the engines of transport vehicles. The emissions from the diesel engines of the machinery can be controlled by proper maintenance and monitoring of machines.

2. Control of Dust Pollution

The main pollutant in air is PM10, which is generated due to various mining activities. However, to reduce the impact of dust pollution the following steps have been taken during various mining activities.

a) During Loading Operation

- Latest loading equipment like hydraulic excavators will be used with dumpers. This reduces the number of buckets to fill from height and thus have comparatively less dust generation. The propagation of this dust is confined to loading point only and does not affect any person both the operators of excavator and dumpers who will sit in closed chamber and will be equipped with dust mask.
- Skilled operators will operate excavators.
- Avoid overloading of dumpers and consequent spillage on the roads.
- The operators' cabin in the drills, dumpers will be provided with dust free enclosure and persons working at high dust prone areas will be provided with dust mask.

b) During Transport Operation

- All the haulage roads including the main ramp be kept wide, leveled, compacted and properly maintained and watered regularly during the shift operation to prevent generation of dust due to movement of dumpers, and other vehicles.
- Mineral carrying trucks will be covered by tarpaulin to avoid escape of fines to atmosphere.
- Regular compaction and grading of haul roads to clear accumulation of loose material.
- Air quality will be regularly monitored both in the core zone and the buffer zone.

c) Plantation Work

In order to reduce air pollution in the surroundings, green belt will be developed around mines office. The plantation will be done in and around villages after consulting with gram panchayet.

d) Monitoring Of Air Pollution

Periodic air quality survey will be carried out to monitor the changes consequent upon mining activities as per the norms of Uttar Pradesh State Pollution Control Board.

9.4.2.3 NOISE ENVIRONMENT

Vehicular activities particularly transportation vehicles and machineries etc. also make a significant contribution to noise around the project site. The followings are the various noise mitigation steps that will be taken up to reduce the impact in and around the site.

- Ambient noise monitoring will be conducted regularly at different locations in and around the mining areas.
- Proper care and maintenance of the equipments will be carried out.
- PUC certified and well tuned vehicles will be used during operation phase. Fixing of silencers to the trucks will reduce the noise levels.
- Plantation will be taken up along the approach roads and vicinity of river bank. The plantation minimizes propagation of noise and also arrests dust.
- Efficient traffic management will be done with speed limits on vehicles. Drivers will be educated to minimize us of horns.

9.4.2.4 WATER ENVIRONMENT

Surface and ground water are two separate entities, so they must be regarded as such. However, there is an ever-increasing need for management of the two as they are part of an interrelated system.

- Mining will be done well above the water table which will minimize the impact on water regime. River bed mining will be done up to depth of 2.6 meter from the un-mined bed level at any point in time with proper bench formation;
- Mining will not intersect the river bed water level or ground water table of the area. So there will be no disturbance to the ground water environment.
- There will be no pumping of water from ground water or river water involved.
- There will be no diversion or modification in the river flow as mining will be done in the dry areas
- No liquid or solid waste during mining will be generated.
- No domestic solid waste will be disposed in the river stream.

9.4.2.5 WASTE MANAGEMENT

Waste management is an important facet of environment management. Thus, solid waste management is important from both aesthetics & environmental viewpoints.

- Solid waste (sand&morrum) that will be generated during mining activities as spillage will be reused and transported over trucks. The trucks will be tarpaulin covered so that there is minimal spillage. Apart from this, no other solid wastes will be generated from the said mining operations.
- Food waste or any domestic waste will be collected in dustbins and will be properly disposed.
- Mobile toilets will be used by employers on site.
- There is no toxic element present in the mineral which may contaminate the soil or river water.

9.4.2.6 BIOLOGICALENVIRONMENT

To minimize any probable impact on biological environment, appropriate management plan will be adopted. Before commencement of the project, temporary fence should be erected along the proposed

project site. This will reduce risk of wild animal causality. Before cutting of any tree, inspection of nest over the trees should be carried out to avoid chicks' causality. There is a requirement to establish a stable ecosystem with both ecological and economic returns. Minimization of soil erosion and dust pollution enhances the beauty of the core and the buffer zone. To achieve this it planned to increase plantation activities. The basic objectives of plantations are as follows:

- Improvement of soil quality
- Quick vegetative cover to check soil erosion
- Improvement in river bank stability
- Conservation of biological diversity
- Provide forage and browse for wild life

9.4.2.7 SOCIAL ENVIRONMENT

For improving the socio-economic environment, proper CSR activities will be taken up in vicinity to uplift the condition of people. All workers will be subjected to medical examination as per Mines Rule 1955 both at times of appointment and in every two month. Medical camps will be organized for this activity. Insurance of all employees as per the rules will be carried out.

9.4.2.8 Occupational Health and Safety

Occupational Health and Safety professionals develop and coordinate safety and health systems and strategies within organizations. They identify workplace hazards, assess risks to employee health and safety, and recommend solutions. Increasingly, Health and Safety Professionals are also responsible for many of the environmental aspects of their workplace. As this profession matures there is an increased emphasis on risk management strategy and on the development of workplace culture.

Though the collection of minor minerals from the Sand mine does not cause any occupational ill effects except fugitive dust generation, there is no source which can show a probability for health related diseases and proper dust suppression will control dust generation and dispersion. The occupational health hazards have so far not been observed. However, Occupational Health and Safety professionals in the ~~minerals industry~~ project shall perform the following tasks:

- Dust masks will be provided to the workers working in the dust prone areas.
- Awareness program will be conducted about likely occupational health hazards so as to have preventive action in place.
- Any worker's health related problem will be properly addressed.
- Periodical medical check-up will be conducted.
- Occupational health and safety within the organization will be promoted and ~~develop~~ safer and healthier ways of working will be developed;
- The investigation of accidents and unsafe working conditions will be supervised, ~~study~~ and possible causes will be studied and recommended for remedial action;
- Training sessions for management, supervisors and workers on health and safety practices and legislation will be developed and implemented;

- Insurance of all employees as per the rules will be carried out.
- Emergency procedures for mine rescues will be developed and coordinated.
- Channels will be kept open to communicate frequently with management to report on the status of the health and safety and risk to enable develop and review occupational health and safety strategies and systems, including policies, procedures and manuals.

9.4.2.9 Afforestation Plan

Under the afforestation plan, plantation in nearby villages and connecting roads will be undertaken. The implementation for development of plantation will be of paramount importance as it will not only add up as an aesthetic feature but will also act as a pollution sink. The species to be grown in the areas should be dust tolerant and fast growing species so that a permanent plantation is possible. Plantation in the barrier zone and roads is necessary as these areas will contain fine particulates resulting from mining operation and vehicle movement.

Mining activities will not cause any harm to riparian vegetation cover as the working will not extend beyond the offset left against the banks in the river. Land on both sides is the private agriculture land. Link road from the active zone pass through the areas. It is proposed to have plantation on both sides of the roads to provide cover against dust dissemination. River banks will be strengthened by way of plantation on the banks. Plantation will also be carried out as social forestry programme in villages, school and the areas allocated by the Panchayat/ State authorities.

Native plants like Bel, Arjun, Mohua, and other local species will be planted. A suitable combination of trees that can grow fast and also have good leaf cover shall be adopted. It is proposed to plant 340 numbers of native species along with some fruit bearing and medicinal trees during the plan period. The plantation programme is given in Table 9.2 and Table 9.3.

Table 9-1: Plantation Programme

Zone	Length (m)	Description	Number of trees
In and around villages	655	200 plant per kilometer	131
Along the river bank	435	1600 plant per hectare	209
Total			340

Table 9-2: Plantation Programme (No. of plant species to be planted)

Sl. No.	Local name	Number of Trees
1	Neem	66
2	Kachnar	55
3	Imli	32
4	Ber	30
5	Bel	40
6	Ashok	45
7	Guler	72
Total Plant		340

Table 9-3: List of Species for Greenbelt Development

Scientific Name	Common Name	Type	Effective In Control Of

Azadirachtaindica	Neem	Tree	Dust, air pollution, noise pollution
Bauhinia variegata	Kachnar	Tree	Dust
Tamarindusindica	Imli	Tree	Air pollution
Zizyphusmauritiana	Ber	Tree	Air pollution
Aeglemarmelos	Bel	Tree	Air pollution, noise pollution
Polyalthialongifolia	Ashok	Tree	Dust, Air pollution
Ficusglomerata	Guler	Tree	Dust, air pollution, noise pollution

9.5 EMP BUDGET

The EMP budget is given in Table 9-5.

Table 9-5: EMP COST

Sl. No	*Measures*	*Capital Cost (Rs.)*	*Annual Recurring Cost (Rs.)*
1	Dust Suppression	1,00,000/-	4,60,000/-
2	Road Maintenance	2,00,000/-	40,000/-
3	Monitoring Programme	-	10,94,000
4	Occupational Health and Safety	1,60,000/-	90,000/-
5	Plantation	1,80,000/-	20,000/-
Total EMP Cost		*6,40,000*	*17,04,000*

9.6 CORPORATE ENVIRONMENTAL RESPONSIBILITY

The CER Policy aims to achieve, consolidate and strengthen good corporate governance including socially and environmentally responsible business practices that balance financial profit with social well being. The proposed activities which are to be taken up as a part of CER programme include:

- Supply of potable drinking water through installation of hand-pumps etc;
- Promote sanitation facilities through awareness programmes and construction of community toilets;
- Formation of Self Help Groups and promote micro finance initiatives for economic empowerment, especially for women; and
- Improve agricultural facilities to enhance access to existing services

The budget provision for CER Programme is given in Table 9.6. It is done as per OM based on project cost of Rs. 185 lakh. Taking 2% as the CER cost, it works out to be Rs. 9,00,000.This will be spent in 5 years.

Table 9-6: CER Budget

Sl. No.	Considerations	CER Cost
1	15 Hand pump for Drinking Water in Patyora village @ Rs.20,000/hand pump	3,00,000.00
2	Repair of schools/ gram sabhas/village roads by filling the pot holes	1,50,000.00
3	Training of village youth in computer/ mobile repair, electrical mechanic for skill development	1,00,000.00
4	Construction of toilets in Primary & High Schools	2,00,000.00

5	Establishment of 6 Public Health Units at rate of 25,000 rs per unit	1,50,000.00
Total		9,00,000.00

CHAPTER-10

10 CONCLUSION

10.1 PROJECT DESCRIPTION

The applicant Sri Sailendra Yadav has obtained Sand/Morrum mining lease through e-tendering from the Govt. of Uttar Pradesh vide Letter of Intent no. 421/khanij/-M. S.C.–tees-vividh (2017-18) dated 07.06.2018 over an area of 90.03 Acres / 36.437 ha on Yamuna river near village Patyora, Tehsil-Hamirpur, Dist- Hamirpur, Uttar Pradesh, over Khand no: 31/4. Mining will be carried out by open-cast semi-mechanized method as per the approved mining plan. Mining will be carried out till a depth of 2.6 m in the river bed to avoid intersection with the groundwater table. No mining operations will be carried out during the monsoon season. The validity period of the lease is 5 years. Mine Plan for the mine has been prepared and approved for production capacity of 7,28,640 m^3 per year. The estimated cost of the project is 185 lakhs.

10.2 PROJECT PROPONENT

Sri Sailendra Yadav, Nainital was the highest bidder in the e-bidding process conducted by government of Uttar Pradesh. The applicant is involved in the construction business for last many years. The applicant will invest necessary funds for the scientific and systematic development of mines including land rejuvenation and progressive reclamation programme and other measures necessary to protect the quality of the environment and human health etc.

The address of the proponent is provided below:

Name of the applicant	Sri Sailendra Yadav
Address of the Applicant	Koushal Colony, Malli Bmouri Post: Dambandunga Tehsil: Haldani, Dist. Nainital
Period of Lease (Yrs)	5 years

10.3 BASELINE ENVIRONMENT STATUS

Baseline environmental studies have been carried during Summer Season (March - May) season of 2018. Studies have been carried out in 10-km from the project area for soil quality, ambient air quality, water quality, noise level monitoring studies, traffic monitoring, ecological studies and demography.

10.3.1 LAND-USE

As clearly depicted in the pie-chart aside, about 77.4% of the study area is agricultural land followed by about 12.8% of Open Scrub. Other major land uses are sandy area, water body area, occupying about 4.5% and 2.9% respectively. The rest is made up of water bodies, forest land and waste land.

So overall we can predict that our study area majorly being sandy with very little human habitation and presence of some forests, the envisaged impact of mining would be very less.

10.3.2 TOPOGRAPHY

The terrain of Hamirpur situated in the Peninsular Shield, is differentiated into a rocky surface of Bundelkhand highland and alluvium surface of Ganga Plain. The rocky surface, attaining elevations of 225 to 335m, contains pediment and dissected denudational hills, The Ganga Plain, with elevation of 110 to 250 m in the northern part, consists of upland and lowland. Banda Plain and Varanasi Plain constitute upland. Banda Plain is rolling with inselbergs and is sandy to gravelly, whereas Varanasi Plain is flat and silty in nature. The lowland is 10 is 30m lower than the upland. It is developed along Yamuna, Betwa and Dhasan rivers and comprises Older Flood Plain and Active Flood Plain. Two levels of terraces are developed along Yamuna and Betwa rivers.

10.3.3 SEISMICITY

The project site falls under seismic zone II which is a low damage risk zone (MSK VI or less).

10.3.4 SOIL QUALITY

Samples were collected and analyzed from 4 locations as per approved methods of CPCB.

CHARACTERISTICS

- The soil in the study area is acidic to moderately neutral with pH ranging from 6.9 to 7.3 in the study area. The texture of the soil is dominantly silty clay loam in nature.
- The moisture content of the soil samples is found to be low and ranges from 4.6% to 5.3%. This is due to moderate water holding capacity of the soil.
    - Organic carbon, a major nutrient for soil fertility, was found in lower proportions in the study area. Organic carbon content is 0.10% in Kachhar Kalan, 0.15% in Kachhar Khura and and 0.16% in Patyora.
    - The NPK content in the soil samples was found to be low to medium which indicates that the soil fertility of the area is low.

From the data above we can infer that the soil of the study area is of low fertility with low Phosphorus and Potassium content, and agricultural activity, if any, would be highly dependent on the addition of external fertilizers. The good content of nitrogen (N) will aid in the growth of leaves

10.3.5 METEOROLOGICAL DATA

The climate of the region over most of the year is a pronounced continental in character. It is very hot in summers and markedly cold in winters. The winter starts in December when day and night temperatures fall rapidly. January is the coldest month. During cold waves, the minimum temperature may go down to the freezing point of water, and frosts can occur. The temperature drops considerably with the advancement of the monsoon in June. However, the night temperature during this period continues to be high.

Temperature of the study area is generally high during April to June. The maximum temperature dips during the monsoon months and steadily falls in winter. The minimum temperature is recorded in the month of January and December. More than 75% of the annual rainfall is received during the months from July to September. The mean rainfall of the area during the monitoring season of March-May is 6.8 mm. The humidity is highest in July, August and September with mean maximum daily relative humidity of 73%. The general predominant wind direction is from west followed by east. Other noticeable wind directions are north-west, north. The average wind speed varies from 5.3 to 13.4 kmph with 13.5% calm.

10.3.6 AIR QUALITY

- Particulate Matter: The World Health Organization has ranked particulate matter as the 13th leading cause of mortality worldwide. PM is a portion of air pollution that is made up of extremely small particles and liquid droplets containing acids, organic chemicals, metals, and soil or dust particles. Populations subjected to long-term exposure to particulate matter have a significantly higher cardiovascular incident and mortality rate. Short-term acute exposures subtly increase the rate of cardiovascular events within days of a pollution spike. Particulate matter also forms a film on plant leaves reducing sunlight and subsequently interfering with photosynthesis and plant growth. Acidic and alkaline materials may cause leaf surface injury while other materials may be taken up across the cuticle. The regular deposition of particulate matter on tree leaves increases the concentration of particulate matter at the place. PM_{10} are particles less than 10 micron in size and are mainly caused by traffic on un-metalled roads, dust from mining activities and smoke from factories. Fine particles are caused by all types of combustion, including motor vehicles, residential wood burning, forest fires, agricultural burning, etc.

  It is observed from monitoring results that the concentration of PM_{10} and $PM_{2.5}$ are well within NAAQS. The 98percentile concentration of PM_{10} and $PM_{2.5}$ varies from 51.6 µg/m^3 (AAQ1) to 59.5 µg/m^3 (AAQ4) and 22.2 µg/m^3 (AAQ1) to 25.6 µg/m^3 (AAQ4) respectively. The results of the monitored data indicate that concentration of Particulate Matter (PM_{10}) is well within

prescribed limit of 100 µg/m³. The values of PM_{10} obtained at all the four locations are somewhat similar. The $PM_{2.5}$ values are also well within the prescribed limit of 60 µg/m³.

- Inhalation of respirable crystalline silica (RCS) is a cause of one of the oldest known occupational diseases, silicosis. Exposure to airborne respirable silica can also cause lung cancer and is possibly linked to a disease known as chronic obstructive pulmonary disease (COPD). Crystalline silica is abundant in the earth's crust and is found in many products and materials. There are efforts to reduce the occupational exposure limits (OELs) for exposure to RCS in several countries, thus, many national institutes, companies, and organizations are concerned about the precision and reliability of respirable silica measurements. It is observed from monitoring results that the percentage of free silica (polymorphs of quartz, cristobalite, and tridymite) as found in the PM_{10} samples are found as 0.37 % (AAQ1&2), 0.41 % (AAQ3), 0.43 % (AAQ4) which when calculated as µg/m³ is within NIOSH standards.
- Gaseous Pollutant (SO_2, NO_2 & CO): Sulphur dioxide gas is an inorganic gaseous pollutant. Sulphur dioxide emissions occur wherever combustion of any fuel containing sulphur takes place. Sulphur dioxide in atmosphere is significant because of its toxicity; Sulphur dioxide is capable of producing illness and lung injury. The important sources of Nitrogen dioxide are from vehicular movement. It is observed from monitoring results that the maximum and minimum SO_2 concentrations were recorded as 13.7 µg/m³ at AAQ4 and 8.4 µg/m³ at AAQ1. ~~Whereas,~~ The minimum concentration of 11.0 µg/m³ for NO_2 was recorded at AAQ1 and maximum concentration of 12.6 µg/m³ was observed at AAQ4. The concentration of SO_2 and NO_2 was found well within prescribed NAAQ standards.
- It is observed from monitoring results that the lowest level of CO was observed at AAQ1 (0.42 mg/m³) while the highest value (0.58 mg/m³) was observed at AAQ3. These levels are found to be well within the NAAQ standard of 2.0 mg/m³ for residential and industrial areas. The major source of CO emission is traffic.

In the absence of any permanent pollution source in the study area, the overall ambient air quality was found to be satisfactory with all the parameters well within the standard limits as stipulated by CPCB. The only source of present pollution found in the area was from heavy vehicle movements on nearest road and burning of domestic fuel.

10.3.7 WATER QUALITY

Surface Water

The pH of the surficial waters are 7.3 (SW1) and 7.2 (SW2) which indicates a slightly alkaline nature. In both the samples, the DO exceeds 4.5 mg/l. Higher DO signifies good quality waters and healthy environment for aquatic life. The BOD concentration is 1.5 mg/l (SW1) and 2.0 mg/l (SW2) signifying less pollution in the waters. Higher concentration of harmful bacteria and other microorganisms in polluted water consumes the dissolved oxygen and thus the BOD increases. Total coliform in the samples are within 750 MPN/100ml. Total coliforms include bacteria that are found in water that has been influenced by human or animal waste.

The overall class of water for individual samples comes as "C" which signifies that water of Yamuna River can be used as a drinking water source after conventional treatment and disinfection.

Ground Water:

Three ground water samples were obtained from handpumps from Kachhar Kalan, Moihatal and Dabsaura villages of the study area. The analysis results indicate that

- The analysis results indicate that the pH of the samples ranges in between 7.1 to 7.4 which are well within the specified standard of 6.5 to 8.5.
- Total hardness was observed to be ranging from 201.9 to 253.3 mg/l. The maximum hardness (253.3 mg/l) was recorded at GW1 (Kachhar Kalan) and the minimum (201.9 mg/l) was recorded at GW2 (Moihatal). The hardness was found to be within the acceptable limit of 300 mg/l as per IS 10500:2012.
- Chlorides were found to be in the range of 96.0mg/l at GW2 to 124.0 mg/l at GW1 which is well within the specified standard of 250 mg/l, as per IS 10500:2012.
- Sulphate was found to be in the range of 37.0 mg/l to 46.0 mg/l. The maximum value observed at GW1 whereas the minimum value observed at GW2, which is well within the specified standard of 200 mg/l as per IS 10500:2012.
- It can be concluded that the ground water quality does not indicate any industrial contamination and meets the standards of IS 10050:2012 and therefore can be used for drinking purposes.

10.3.8 Noise Level Survey

The hourly recorded noise level at four locations in the study area shows fluctuations because of change in traffic movement and other man made sources. it is observed that the present noise level is not exceeding the standard level of CPCB norms. The Leq was recorded in the range of 48.8 to 52.9 dB(A) during daytime and 38.5to 43.3 dB(A) during night time.

10.3.9 Traffic Monitoring

The monitoring was conducted in March 2018. 24 hours classified Volume Count was done for heavy motor vehicles (HMV), light motor vehicles (LMV) and two/three wheelers. The traffic volume count was done as per IRC code and 2 staffs were deployed for single direction vehicular movement. The total numbers of vehicles per hour under the three categories were determined.

10.3.10 Ecology

The district enjoys a varied type of flora. The faunal groups are mostly restricted towards the forest areas. A detailed biological study of the study area i.e. 10 km of the proposed project has been carried out to identify the composition of flora and fauna. For fauna, random sites were selected for faunal identification. For both the parameters, data from district forest department was obtained.

10.3.11 Demography & Socio-Economic Condition

There are 79 villages in the study area. These villages have 37266 households accumulating 199555 population. The overall household size has declined from 5.9 in 2001 to 5.4 in 2011. According to the survey, gender ratio of study area was 876 in 2011 which is lower as compared to the national gender ratio i.e. 940.

10.4 Anticipated Impacts & Mitigation Measures

Environmental Impact Assessment (EIA) of the proposed project has been carried out with reference to land & soil, water, noise, flora, fauna and socio economic status.

10.4.1 Land Environment

The landscape of this area will not be disturbed by the proposed river bed mining. Roads for transportation of mined minerals will be maintained and used; no further impact on land use is anticipated. Compaction of soil due to transportation of minor minerals will impact the texture of soil.

Mitigation measures: Only the maintained haul roads will be used for transportation.

10.4.2 Air Environment

In opencast mining the different processes of handling and transportation of minor minerals in the mining activities are prone to generation of high levels of fugitive dust that may increase the levels of particulate matters to a high extent. Dusts are generated due to the following mining processes:

- Generation of dust due to transportation of mined minerals.
- Generation of dust due to movement of heavy vehicles.

The effects of air pollutants upon receptors are influenced by concentrations of pollutants and their dispersion in the atmosphere. Air quality modeling is an important tool for prediction, planning and evaluation of air pollution control activities besides identifying the requirements for emission control to meet the regulatory standards. It was found that after mines operation there Ground Level Concentration for Particulate Matters will be below the stipulated standards. The efficient management of air quality requires the use of modeling techniques to analyze the patterns of pollutant concentrations from many individual sources of air pollutants operating simultaneously.

Mitigation measures

- The dust suppression measures like water spraying will be done on the roads.
- Only PUC certified vehicles will be deployed for transportation.
- Care will be taken to prevent spillage from the trucks.
- Trucks will be covered with tarpaulin to prevent fugitive dust.

10.4.3 Water Environment

Mining from a river bed block has a direct impact on the physico-chemical habitat characteristics. These characteristics include in-stream roughness elements, depth, velocity, turbidity, sediment transport and

stream discharge. Altering these habitat characteristics can have impact on both in-stream biota and associated riparian habitat.

Mitigation measures: The deposits occur in the middle/bottom of the river. During the lease period, the deposit will be worked from the top surface to 2.6m bgl or above the ground water table whichever comes first. Thus no ground water pollution is expected, as mining will not intersect ground water. It is not proposed to divert or truncate any part of the stream.

10.4.4 NOISE ENVIRONMENT

The hourly recorded noise level at four locations in the study area shows fluctuations because of change in traffic movement and other man made sources. it is observed that the present noise level is not exceeding the standard level of CPCB norms. The Leq was recorded in the range of 48.8 to 52.9 dB(A) during daytime and 38.5to 43.3 dB(A) during night time.

Mitigation Measures:

- The vehicles will be maintained in good running condition so that noise will be reduced to minimum possible level.
- Trucks drivers will be instructed to make minimum use of horns at the village area.
- Plantation of trees along the banks and approach roads will be done to dampen the noise.

10.4.5 ECOLOGICAL ENVIRONMENT

No major impact is foreseen on the flora and fauna of the study area. The most important effect of sand mining on aquatic habitats are bed degradation and sedimentation, which can have substantial negative effects on aquatic life attached to stream bed deposits.

Mitigation Measures:

- Noise produced due to vehicular movement for carrying sand materials will be within permissible noise limit. Higher noise level in the area may lead to restlessness and failure in detection of calls of mates and young ones.
- The riparian ecosystem or the wetlands will not be destroyed by the mine owners/workers.
- Mining will be carried out on the dry river bed area and the river water channel will not be disturbed at all.
- Laborers will not be allowed to discard food, polythene waste etc., which can attract animals/birds near the core site.

10.4.6 SOCIO-ECONOMIC ENVIRONMENT

Establishment of the mines will generally contribute positively to the socio-economic status of the study area in terms of employment both direct and indirect. With the continuation of mining operations,

employment opportunities, communication and connectivity will be improved. Thus this project will, in general will have a positive impact on the socio-economic aspect in the surrounding area.

10.4.7 Occupational Health & Safety:

The workers working in sand mining and its loading transportation and operation will be given safety training. All the workers will be provided with dust mask and protective clothing. Periodic health checks as per the mine safety rules will be undertaken. The drop heights will be kept minimum and water sprinkling will be done periodically to suppress fugitive dust emission. The mining operation is limited to day time and therefore utmost care will be taken that no significant health impacts are foreseen. The first aid box will be provided at site as per rule.

10.5 Environment Monitoring Plan

Success of any Environment Monitoring Plan depends upon the efficiency of the organizational set-up responsible for the implementation of the programme. Regular monitoring of the various environmental parameters is also necessary to evaluate the effectiveness of the management programme so that necessary corrective measures are taken to resolve them. Since environmental quality parameters at work zone are important for maintaining safety, the monitoring work forms part of the safety measures also. Environment monitoring cost is a recurring cost as it will be outsourced. The annual recurring cost is calculated to be Rs. 10,94,000.

10.6 Risk Assessment & Disaster Management Plan

The impacts on the various environmental attributes should be mitigated using appropriate pollution control equipment. The Environment Management Plan prepared for the proposed project aims at minimizing the pollution at source

10.7 Environment Management Plan

The impacts on the various environmental attributes should be mitigated using appropriate pollution control equipment. The Environment Management Plan prepared for the proposed project aims at minimizing the pollution at source.

Environment management will be executed by a senior executive reporting to the managing director. The team will be responsible for planning, execution and monitoring of all aspects of the environment, during the mining operation. A well-defined environmental monitoring program would be implemented with trained and qualified staff that would monitor the ambient air to ensure permissible levels are always maintained for various pollutants parameters. The locations for air monitoring will be finalized in consultation with SPCB. EMP cost of the project will be Rs. 6,40,000 as Capital Cost and Rs.17,04,000 as annual recurring cost.

10.7.1 AIR POLLUTION MANAGEMENT

In the river bed mining activities, the only source of gaseous emission is the fugitive dust generation during mining, the engines of vehicles use for excavation and transporting of the mined materials. The mitigation measures proposed to mitigate such impacts are:

- Use of dust screens and water sprinklers during operation of mining to prevent gusting dust.
- Plantation will be carried out on approach roads and nearby vicinity of river bank.
- To control the emissions regular preventive maintenances of vehicles will be done and all transportation vehicles will carry a valid PUC certificate.

10.7.2 NOISE POLLUTION MANAGEMENT

Vehicular activities particularly transportation vehicles and machineries etc. also make a significant contribution to noise around the project site.

- Ambient noise monitoring is being conducted regularly at different locations in and around the mining areas.
- Regular servicing and tuning of vehicles will reduce the noise levels. Fixing of silencers to the trucks will reduce the noise levels.
- Optimum selection of machinery tools or equipment reduces excess noise levels. For example selection of certain machinery/equipment which generates less noise (Sound) due to its superior technology etc. is also an important factor in noise minimization strategy.
- Proper lubrication and maintenance of machines, vehicles etc. will reduce noise levels. For example, it is a common experience that, many parts of a vehicle will become loose while on a rugged path of journey. If these loose parts are not properly fitted, they will generate noise and cause annoyance. Similarly is the case of machines proper handling and regular maintenance is essential not only for noise control but also to improve the life of machine.
- Green belt development can attenuate the sound levels. The degree of attenuation varies with species of greenbelt. Appropriate species will be chosen and planted to attenuate the sound levels.

10.7.3 WATER POLLUTION MANAGEMENT

- Mining in the area will be done well above the water table as well as river bed water level which will minimize the impact on water regime. River bed mining will be done up to depth of 3.0 meter from the un-mined bed level at any point in time with proper bench formation.
- Mining will not intersect the river bed water level or ground water table of the area. So not at all disturbing water environment.

10.7.4 WASTE MANAGEMENT

Although there is no toxic element present in the mineral which may contaminate the soil or river water, the following measures are considered to treat the solid waste that will be generated during mining operation.

- Solid waste (sand & silt) that will be generated during mining activities as spillage will be recollected and transported. Apart from this, no other solid wastes will be generated from the said mining operations.
- Generated food waste will be collected in dustbins and would be properly disposed off.
- Mobile toilets will be used by employers on site.

10.7.5 AFFORESTATION PLAN

Under the afforestation plan, plantation in nearby villages and connecting roads will be undertaken. The implementation for tree plantation will be of paramount importance as it will not only add up as an aesthetic feature but will also act as a pollution sink.

10.7.6 CORPORATE ENVIRONMENTAL RESPONSIBILITY

The CER Policy aims to achieve, consolidate and strengthen good corporate governance including socially and environmentally responsible business practices that balance financial profit with social well being. The proposed activities which are to be taken up as a part of CER programme include:

- Supply of potable drinking water through installation of hand-pumps etc;
- Promote sanitation facilities through awareness programmes and construction of community toilets;
- Formation of Self Help Groups and promote micro finance initiatives for economic empowerment, especially for women; and
- Improve Agricultural facilities to enhance access to existing services
- The CER cost for the project will be 9,00,000 INR.

CHAPTER-11

11. DISCLOSURE OF CONSULTANTS

11.1 INTRODUCTION TO THE FIRM

Greencindia Consulting Private Limited (GCPL) is an environmental consultancy organization, manned by a highly qualified, experienced and multidisciplinary team of scientists and engineers. The company has received accreditation from Quality Council of India (NABET-QCI) as an EIA Consultancy organization. The company has its own sophisticated in-house laboratory which is accredited to NABL.

The primary aim of GCPL is to sensitize policy planner and local people about their development needs through capacity building process. The company facilitates managerial and technical expertise to people and associations for development of areas and regions.

GCPL has undertaken more than 110 EIA and other associated studies and clearances for mining projects, thermal power projects; airports, road and highways; special economic zones (SEZs); urban infrastructure projects, etc.

The main objects of the Company are as follows;

- To carry on the business of providing all types of consultancy services related to Social And Environmental Impact Assessment, Environment Action Plan, Tribal Development Plan, Resettlement and Rehabilitation Action Plan, Project Information Report, Detailed Project Report, Need Assessment Report, Corporate Social Responsibility Plan, Forest Diversion Plan, Wildlife Conservation Plan, Drainage Plan and Hydrogeology Environment, Social & Land related legal services and any other consultancy services and studies related to urban development, rural development, environment, forest and legal aspects.
- To provide consultancy services in environment monitoring, sample collection of air, water, soil, meteorological data and publish testing results for the collected samples
- To undertake research study in the field of environment, social, legal, agriculture, urban planning, rural planning, alternate sources of energy etc and provide consultancy/advisory/training services in these field to government, quasi-government, non-government and private institutions.
- EPFI reporting, environmental and social impact assessment according to IFC guidelines and equator principles.

11.2 AREAS OF EXPERTISE

- Environmental Impact Assessment
- Environmental Management Plan
- Disaster Management Plan
- Risk Assessment
- Rehabilitation & Resettlement Plan

- Pre-feasibility Report
- Detailed Project Report
- Geo-Technical Investigation
- National, Regional and Urban Plans
- Management Information System and Geographic Information system
- Urban Infrastructure Development including Water Supply and Solid Waste Management
- Environmental Monitoring and Assessments
- Impact Assessment Formulate Policies & Mitigation Measures R&R
- Natural Resource Management
- Terminal Planning and Design
- Institutional Strengthening
- Development, Functional and Strategic Planning and Design
- Preparation of Manuals
- Training Programmes

11.3 ACHIVEMENT OF THE COMPANY

Greencindia Consulting Private Limited (GCPL) (formerly GIS Enabled Environment & Neo-graphic Center) is an ISO 9001:2008-QMS, 14001:2004-EM and 18001:2004-OHSAS certified company. The company is accredited with QCI-NABET since 2010. We have completed Two RA & Two SA. We are accredited for following sectors: -

- Thermal Power Plants.
- Mining Project-Open Cast & Underground Mining.
- Coal Washery.
- River Valley Projects.
- Metallurgical Industries (Ferrous and Non-Ferrous).
- Industrial Estate/Parks/Complexes/areas, export processing zones, special economic zones, biotech parks, leather complexes.
- Highways.
- Cement Plants.
- Oil & gas transportation pipelines.
- Common Municipal Solid Waste Management Facility.
- Airports.
- Buildings and construction projects.
- Townships & Area development projects.

11.4 BRIEF RESUME OF THE COMPANY

GCPL comprises of group of professionals drawn from development related fields. The core members of GCPL team hold experiences in Developmental Planning, Pollution Control, Economic Analysis, Social

Work and Information Technologies. In addition there is a panel of senior associates and young voluntaries facilitating the various programmes. The brief resume of the Environment Coordinator and Functional Area experts (Core Functional Areas & Significant Functional Area) are discussed below:

Sl. No.	Name of Expert	Years of Experience	Area of Specialization	Involvement (Period & Task)
1	K.D. Choudhury	45	EC-Mining of Minerals	▪ Selecting the team to be involved in the EIA report. ▪ Compiling Form-1 of the notification, 2006 based on personal understanding and from inputs from the Mine plan, site and client. ▪ Visiting the site for appropriate duration for the selection of sampling locations and deciding the type of samples in consultation with the FAEs. ▪ Reviewing the process write-up ▪ Developing the EIA report and circulating the same amongst EIA team members for final feedback and ensuring coverage of the respective functional areas FA in the EIA.
			Air Pollution Monitoring Prevention Control-AP	<u>JANUARY 2018 TO TILL DATE</u> ▪ Assessment of Impact associated with the project operation Activities ▪ Assessment of Impact Associated with vehicle movement Operation ▪ Development of Management Plan to control the air pollution & its mitigation
			Noise & Vibration-NV	<u>JANUARY 2018 TO TILL DATE</u> ▪ Assessment of impact associated with project ▪ Assistance during development of project management plan
			Risk & Hazards Management-RH	<u>JANUARY 2018 TO TILL DATE</u> ▪ Assessment of risk associated and development of management plan
2	Nilanjan Das	18	Socio-economic-SE	<u>JANUARY 2018 TO TILL DATE</u> ▪ Assessment of social impact associated with project ▪ Assistance during development of project management plan
3	Dr. Deo Narayan	20	Meteorology, Air Quality Modelling & Prediction-AQ	<u>JANUARY 2018 TO JANUARY 2019</u> ▪ Selection of air monitoring locations ▪ Study of wind pattern and weather

Sl. No.	Name of Expert	Years of Experience	Area of Specialization	Involvement (Period & Task)
				conditions ▪ Quantitative assessment of project impact associated with vehicle movement during operation activities. ▪ Development of Management Plan for air quality
4	Rahul Singh	17	Land Use-LU	JANUARY 2018 TO TILL DATE ▪ Development of Land-use Map ▪ Impact of project on surrounding Land use ▪ Assistance during development of project management plan ▪ Mitigation Measures due to change in Land uses by the project
5	Swagata Mukherjee	4.7	Water Pollution-WP	JANUARY 2018 TO TILL DATE ▪ Monitoring location selection for ground water and surface water ▪ Assessment of Impact associated with the project operation activities ▪ Development of Water Management Plan.
6	Dipannita Das	5	Ecology & Biodiversity-EB	JANUARY 2018 TO TILL DATE ▪ Survey of existing flora & fauna in the study area ▪ Assessment of impact associated with project ▪ Selection of species for greenery development ▪ Assistance during development of project management plan
7	Dr.P.C Kuniyal	8	Soil Conservation (SC)	JANUARY 2018 TO TILL DATE ▪ Assistance during development of project management plan
8	Dr.Manoj Kumar	15	HG	JANUARY 2018 TO TILL DATE ▪ Water table of the area in pre-monsoon and post monsoon season ▪ Development of management plan
		15	GEO	JANUARY 2018 TO TILL DATE Study Of Geological And Rock Structure Of The Study Area And Suggest Appropriate

Sl. No.	Name of Expert	Years of Experience	Area of Specialization	Involvement (Period & Task)
				Management Measures
9	Dr. Koushik Sadhu	8	HW	JANUARY 2018 TO TILL DATE ▪ Quantitative Assessment of hazardous waste likely to generate ▪ Development of hazardous waste Management Plan
	Dr. Koushik Sadhu	8	ISW	▪ Quantitative Assessment of industrial waste likely to generate ▪ Development of industrial waste Management Plan

11.5 BRIEF RESUME OF THE COMPANY

GCPL is accredited under QCI-NABET scheme for accreditation of EIA consultants organizations vide certificate number: NABET/EIA/1922/RA 0159 on April,16 2020 for Mining of Minerals (Open Cast only), Thermal Power Plants, Metallurgical Industries (Ferrous only)-both primary & secondary, Industrial Estate Planning, Common Municipal Solid Waste Management, Highways, Railways, transport terminals, Cement Plants, MRTS, Building and large construction projects and Townships & Area Development Projects.

In furtherance to this as per provision of the scheme Re-accreditation assessment was conducted in April 2017 and additional sectors of Cement Plants, Oil & gas transportation pipeline and Common Municipal Solid Waste Management Facility were (Annex 11.1).

11.6 CIRTIFICATE OF ACCREDITATION FOR LABORATORY

The analytical tests for GCPL are conducted by **M/s Envirotech East Private Limited, Kolkata** which was accredited by MoEF&CC (refer to Annex 11.2). GCPL has signed MoU with **M/s Envirotech East Private Limited, Kolkata** (Annex 11.3) for specialized testing and analysis of samples from their laboratory.

S. NO	Name of instruments	Quantity
1.	Refrigerator	3
2.	Deep Freeze	1
3.	BOD Incubator	2
4.	Hot Air Oven	5
5.	Muffle Furnace	2
6.	Autoclave	2
7.	Water Bath	2
8.	Centrifuge	2
9.	Water Distillation Assembly (Glass)	2

Sl. No.	Name of the Equipment	Quantity
10.	Heating Mantle	2
11.	Hot Plate	2
12.	Magnetic Stirrer	2
13.	Vacuum Filtration Pump	2
14.	Inoculation Hood	2
15.	Aquarium for Bioassay & Aerators	1
16.	Depth Sampler	1
17.	Bottom Sampler	1
18.	Filtration Assembly	2
19.	Other Equipment	
	Fluoride Distillation Assembly	2
	Cyanide Distillation Assembly	1
	Ammonia Distillation Assembly	1
	COD Digestion Assembly	1
	Arsenic Estimation Assembly (Gutzeit Generator)	10

List of Sophisticated Instruments:

Sl. No.	Name of the Equipment	Quantity
1.	Atomic Absorption Spectrophotometer	2
2.	Gas Chromatograph	1
3.	UV-Visible Spectrophotometer	2
4.	Micro Analytical Balance	2
5.	Specific Ion Meter	1

List of Instrument:

Sl. No.	Name of the Equipment	Quantity
1.	Analytical Balance	2
2.	Physical Balance	1
3.	pH Meter	5
4.	Conductivity Meter	2
5.	Turbidity meter	2
6.	Compound Microscope	2
7.	Flame Photometer	2
8.	Sound Level Meter	6

Ambient Air / Fugitive Emissions:

Sl. No.	Name of the Equipment	Quantity
1.	High Volume Sampler APM-410 and 415 with APM 411	22 Nos.
2.	Respirable Dust Sampler APM-451, APM-460 with APM41144 Nos.	44 Nos.
3.	CO dectector tubes	50 Nos.
4.	Gas Sampling Kit	40 Nos.
5.	Personal Sampler	8 Nos.
6.	Handy Sampler	12 Nos.

Micro Meteorological Instruments:

Sl. No.	Name of the Equipment	Quantity
1.	Automatic Weather Station	4 Nos.
2.	Wind Monitor	10Nos.
3.	Dry & Wet Bulb Thermometer	25 Nos.
4.	Barometer	25 Nos.
5.	Rain Gauge 10 Nos.	10 Nos.

Source Emission:

Sl. No.	Name of the Equipment	Quantity
1.	Stack Monitoring Kit APM-620 will all optional accessories	13 Nos.
2.	Stack Velocity and Temp. Monitoring Kit APM-602	10 Nos.
3.	Orsat Apparatus	8 Nos.

List of Equipments with Accessories for Soil Investigation:

Sl. No	Items	Qty.	Sl. No	Items	Qty.
1.	Rig (with six)	6 Nos.	35.	Water Drum	10 Nos.
2.	Winch	5 Nos.	36.	Water Swivel	6 Nos.
3.	Casing M.S	7 Nos.	37.	Tent	6 Nos.
4.	Extension Rod	8 Nos.	38.	Tarpaulin	20 Nos.
5.	Drill Rod	7 Nos.	39.	Dull Wrench	17 Nos.
6.	Augar	2 Nos.	40.	Hydraulic Jack 25/50 Ton	17 Nos
7.	G.I.	7 Nos.	41.	R S Joists	5 Nos.
8.	Hand Pump	2 Nos.	42.	Socket	6 Nos.
9.	Mud Pump (Electrical)	3 Nos	43.	Guity	12 Nos.
10.	Delivery Pipe	8 Nos.	44.	Boring Cutter	6 Nos.
11.	Suction pipe	5 Nos.	45.	Boring Guide	5 Nos.
12.	Hosting Plug	6 Nos.	46.	Nipple	16 Nos.
13.	Slide Wrench	6 Nos.	47.	Rock Cutting Machine with diamond blade for trimming cutting & grinding rock core	7 Nos.
14.	Ring wrench	7 Nos.	48.	NX casing	12 Nos.
15.	Spikes	10 Nos.	49.	Water Level Indicator	4 Nos.
16.	Diesel Generator	5 Nos.	50.	Field CBR Test	2 Set
17.	Dynamic Cone	4 Nos.	51.	Concrete Vibrator	5 Nos.
18.	Vane Shear Test Set Up	5 Nos.	52.	Bored Piling rig – heavy-duty power operation, with accessories	8 sets
19.	Pipe Engine	2 Nos.	53.	MS Plate	3 Nos.
20.	Motor	4 Nos.	54.	Field Vane Shear Test equipments with accessories, capable of conducing Vane shear Test upto 20 m depth	2 Nos.
21.	Tool Box	6 Set	55.	Block Vibration Test equipment will all accessories	2 Nos.
22.	P.L.T. Equipment (20 Ton Truss)	5 Nos.	56.	Seismic Refraction Test Equipment	2 Nos.

Sl. No	Items	Qty.	Sl. No	Items	Qty.
23.	Shell	10 Nos.	57.	Compression Testing Machine	2 Nos.
24.	Trizel	7 Nos.	58.	Day tumber	3 Nos.
25.	Jerk Block	5 Nos.	59.	Pressure Gauge	5 Nos.
26.	Monkey	7 Nos.	60.	Dial Gauge (mm)	3 Nos
27.	Manila Rope	9 Nos.	61.	Dial Gauge (inch)	4 Nos.
28.	Hammer	18 Nos.	62.	Hold Fast (Angle)	2 Nos.
29.	Chain Tong	12 Nos.	63.	Box Section	5 Nos.
30.	Pipe Wrench	12 Nos.	64.	Load Flames for load testing of soils, piles etc	2 Nos.
31.	Spade	7 Nos.	65.	Water Pumps	5 Nos.
32.	Crow Bar	9 Nos.	66.	Magnetic Base Stand)	3 Nos.
33.	Sample Head	8 Nos.	67.	53 Concrete Mixers	5 Nos.
34.	S.P.T. Tube	14 Nos.			

Softwares:

Sl. No.	Name of the Software	Quantity
1.	Air impact Prediction Softwares-ISCST-3, Caline-4	6 Nos.
2.	Noise Modeling Software-Sound-32	2 Nos.
3.	Risk Assessment Software	1 Nos.
4.	Mapping Software- ArcInfo, ArcView, ERDAS, Autodesk, AutoCad	7 Nos.
5.	Data Analysis Software-SPSS, Microsoft Access	15 Nos.

ANNEX 1.1: TOR LETTER

State Level Environment Impact Assessment Authority, Uttar Pradesh

Directorate of Environment, U.P.
Vineet Khand-1, Gomti Nagar, Lucknow - 226 010
Phone : 91-522-2300 541, Fax : 91-522-2300 543
E-mail : doeuplko@yahoo.com
Website : www.seiaaup.in

To,

Shri Shailendra Yadav,
Koushal Colony Malli bmouri,
Post- Dambandunga,
Tehsil- Haldani, District- Nainital.

Ref. No.....380...../Parya/SEAC/4412/2018 **Date: 22 October, 2018**

Sub: Terms of Reference for Sand/Morrum mining from Yamuna River at Khand No. 31/4, Village- Patyora, Tehsil & District- Hamirpur, U.P., (Leased area 36.437 ha).

Dear Sir,

Please refer to your application/letter dated 24/07/2018 & 26/07/2018 addressed to the Secretary, SEAC, Directorate of Environment, U.P., Lucknow on the subject as above. The matter was considered by the State Level Expert Appraisal Committee in its meeting held on dated 30/08/2018 and SEIAA in its meeting dated 11/09/2018.

A presentation was made by the project proponent along with their consultant M/s GreencIndia Consulting Pvt. Ltd. The proponent, through the documents submitted and the presentation made, informed the committee that :-

1. The environmental clearance is sought for Sand/Morrum mining from Yamuna River at Khand No. 31/4, Village- Patyora, Tehsil & District- Hamirpur, U.P., (Leased area 36.437 ha).
2. Salient features of the project is as follows:

1. On-line proposal No.	SIA/UP/MIN/28394/2018		
2. File No. allotted by SEIAA, UP	4412		
3. Name of Proponent	**Sailendra Yadav**		
4. Full correspondence address of proponent and mobile no.	Koushal Colony, Malli Bmouri Post: Dambandunga Tehsil: Haldani, Dist. Nainital		
5. Name of Project	Patyora Sand/Morrum Deposit On Yamuna River		
6. Project location (Plot/Khasra/Gata No.)	Village - Patyora, Khand No. 31/4. Tehsil- Hamirpur, District- Hamirpur of Uttar Pradesh.		
7. Name of River	Yamuna River		
8. Name of Village	Patyora		
9. Tehsil	Hamirpur		
10. District	Hamirpur		
11. Name of Minor Mineral	Sand/Morrum		
12. Sanctioned Lease Area (in Ha.)	36.437 Ha.		
13. Mineable Area (in Ha.)	29.637 Ha.		
14. Zero level mRL	91 m		
15. Max. & Min mrl within lease area	99-92 m.		
16. Pillar Coordinates (Verified by DMO)	**Point**	**Latitude**	**Longitude**
	A	25°55'21.03"N	80°16'04.85"E
	B	25°55'43.32"N	80°16'22.63"E

	C	25°55'31.32"N	80°16'34.75"E
	D	25°55'14.06"N	80°16'19.84"E
17. Total Geological Reserves	11,85,480m^3		
18. Total Mineable Reserves in LOI	7,28,640m^3		
19. Total Proposed Production	36,43,200m^3		
20. Proposed Production/year	7,28,640m^3		
21. Sanctioned Period of Mine lease	5 Years		
22. Production of mine/day	2915 m^3/Day		
23. Method of Mining	Opencast Semi-mechanized mining		
24. No. of working days	250 days/ Year		
25. Working hours/day	12 Hours		
26. No. Of workers	180		
27. No. Of vehicles movement/day	324		
28. Type of Land	Govt. Land		
29. Ultimate Depth of Mining	2.6 m		
30. Nearest metalled road from site	1500 m		
31. Water Requirement	**PURPOSE**	**REQUIREMENT (KLD)**	
	Drinking	1.8	
	Suppression of dust	7.2	
	Plantation	8.4	
	Others (if any)	0.00	
	Total	**17.40**	
32. Name of QCI Accredited Consultant with QCI No and period of validity.	GreencIndia Consulting Pvt Ltd. NABET/EIA/1619/RA0058 valid till 27/10/2019		
33. Any litigation pending against the project or land in any court	No		
34. Details of 500 m Cluster Map & certificate verified by Mining Officer	614/ Khanij-M.M.C-TEES-BIBIDH(2018-19), Dated: 16th July, 2018.		
35. Details of Lease Area in approved DSR	36.437 Hectares		
36. Length and breadth of Haul Road	Length 1500 m, Width 6.0 m		

3. The mining would be restricted to unsaturated zone only above the phreatic water table and will not intersect the ground water table at any point of time.
4. This project does not attract any of the general conditions applicable on mining projects specified in EIA Notification 14/09/2006.
5. The mining operation will not be carried out in safety zone of any bridge or embankment or in eco-fragile zone such as habitat of any wild fauna.
6. There is no litigation pending in any court regarding this project.
7. The project proposal falls under category–1(a) of EIA Notification, 2006 (as amended).

The committee discussed the matter in light of MOEFCC Notification dated 15/01/2016 and recommended to issue following terms of reference (TOR) for the preparation of EIA.

1. All pages of technical documents/EIA/EMP etc. should be signed by the consultant and project proponent both.
2. Copy of all the analysis reports signed by analyst approved by NABL or MoEF&CC shall be annexed with the EIA report and original analysis reports should be presented at the time of presentation.
3. MOU signed between the project proponent and the consultant should be submitted.
4. The TOR shall be valid strictly for the annual production/yearly production as given in the approved Mining Plans of the respective proposal.
5. Regional combined EMP study should be carried out.

6. Regional combined area of homogeneous leases in cluster situation should be verified by DMO.
7. Certificate from Mining Officer that there is no other mining area exit within 500 m periphery.
8. CER cost to be calculated for individual lease.
9. An intimation regarding conducting the monitoring to be sent to concerned District Magistrate and State Pollution Control Board office.
10. The lab conducting the analysis should be NABL accredited or MoEF& CC approved.
11. Public hearing to be conducted as per EIA Notification, 2006.
12. A copy of document in support of fact that the proponent is the rightful lessee of the mine should be given.
13. Approved mining plans for all the mining projects.
14. All documents including approved mine plan, EIA and public hearing should be compatible with one another in terms of the mine lease area, production level, waste generation and its management and mining technology and should be in the name of the lessee. The mine plan should take into account the conditions of the mine lease, if any, in terms of distance to be left un-worked from the river flowing nearby.
15. The study area will comprise of 10 km zone around the mine lease from the lease periphery and the data contained in the EIA such as waste generation etc should be for the life of the mine / lease period.
16. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary and national park, migratory route of fauna, water bodies, human settlements and other ecological features should be indicated.
17. Land use plan of mine lease area should be prepared to encompass pre-operational, operational and post-operational phases and submitted.
18. Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife Corridors, Tiger/Elephant Reserves (existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above should be obtained from the state Wildlife Department / Chief Wildlife Warden under the Wildlife (Protection) Act, 1972 and copy furnished.
19. A detailed biological study for the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out covering both terrestrial and aquatic flora and fauna. Details of flora and fauna, duly authenticated, separately for core and buffer zone should be furnished based on field survey clearly indicating the Schedule of the fauna present.
20. Impact of change of land use should be given.
21. Impact of mining on the hydrology of the area including water flow in the river adjoining the mine lease. It should also take into account the inundation of mined out area due to flow of water from the river.
22. R & R plan / compensation details for the project affected people should be furnished. While preparing the R & R plan, the National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs / STs and other weaker sections need based sample survey, family-wise, should be undertaken to assess their requirement and action programmes prepared accordingly integrating the sectoral programme of line departments of the State Governments.
23. 02 km kachcha haul road to be made motorable. Submit Plan.
24. One season (Non Monsoon) primary baseline data on ambient air quality (PM2.5, PM10,

SOx and NOx), water quality, noise level, soil and flora and fauna shall be collected and the AAQ data so collected presented data-wise in the EIA and EMP report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.

25. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10 particularly for free silica should be given.
26. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicle for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any and the habitation. The wind rose showing pre-dominant wind direction may also be indicated on the map. The impact of stone crusher nearby should also be taken into account.
27. The water requirement for the project, its availability and source to be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should be indicated.
28. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.
29. Details of water conservation measures proposed to be adopted in the projected should be given.
30. Impact of the project on the water quality both surface and groundwater should be assessed and necessary safeguard measures, if any required should be provided.
31. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed hydro geological study should be undertaken and report furnished. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of groundwater should also be obtained and copy furnished.
32. Details of first order stream, if any passing through lease area and modification diversion proposed, if any and the impact of the same on the hydrology should be brought out.
33. Details of rainwater harvesting proposed, if any, in the project should be provided.
34. Information on reduced levels site elevation, working depth, groundwater table etc. below natural surface level should be provided. A schematic diagram may also be provided for the same.
35. Quantity of solid waste generated to be estimated and details for its disposal and management should be provided. The quality, volumes and methodology planned for removal and utilization (preferably concurrently) of top soil should be indicated. Details of backfilling proposed, if any, should be given. It may be clearly indicated that out of the total waste generated during the mine life, how much quantity would be backfilled and how much quantity would be disposed off in the form of external dump (number of dumps, their height, terraces etc. to be brought out).
36. The reclamation plan, post mine land use and progressive green belt development plan shall be prepared in tabular form (prescribed format) and submitted.
37. Impact on local transport infrastructure due to the project should be indicated. Projected increase in truck traffic as a result of the project in the present road network (including those outside the project area) should be worked out, indicating whether it is capable of handling the increased load. Arrangement for improving the infrastructure, if

contemplated (including action to be taken by other agencies such as State government) should covered.

38. Details of the infrastructure facilities to be provided for the mine workers should be included in the EIA report.
39. Conceptual post mining land use and Reclamation and Rehabilitation of mined out area (with plans and with adequate number of sections) should be given in the EIA report.
40. Phase-wise plan of green belt development, plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.
41. Occupational health impact of project should be anticipated and preventive measures initiated. Details in this regard should be provided. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. Special attention should be in view of the stone crusher nearby.
42. Measures of social-economic significance and influence to the local community proposed to be provided by project proponent should be indicated. As far as possible, quantitative dimensions may be given with time frame for implementation.
43. Detailed environmental management plan to mitigate the environmental impacts which, should inter-alia should include the impact due to change of land use, due to loss of agricultural land and grazing land, if any, occupational health impacts beside other impacts of the projects. It should also take into account the impacts due to stone crusher nearby and also provide for preventing the silt from going into the river.
44. Risk assessment and disaster management plan due to inundation of mine as a result of its location close to the river should also be examined and addressed.
45. Public hearing shall be undertaken as per law. Public hearing points raised and commitment of the project proponent on the same along with the time bound action plan to implement the same should be provided.
46. Details of litigation pending against the project, if any, with direction / order passed by any Court of Law against the project should be given.
47. The cost of project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.
48. Present position of distances of railway lines, National Highway including culverts and bridges, Reservoir, lake, Canal, Road including culverts & bridges, Soil conservation works, nursery plantation, check dams, water supply schemes & irrigation schemes, water sources such as Springs, Infiltration galleries, Percolation wells, Hand pumps, Tube wells and existing flood control / protection work should be included and indicated in location map.
49. Proponent should submit attested photocopy of the sanction of mining lease by the State Government.
50. The company will have a well laid down Environment Policy approved by its Board of Directors and it may be detailed in EIA report.
51. The Environment Policy must prescribe for standard operating process/ procedures to bring into focus any infringement / deviation / violation of the environment or forest norms/conditions and it may be detailed in EIA.
52. The hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and details of this system may be given.
53. The company must have a system of reporting of non-compliance/violations of environmental norms to the Board of Directors of the company and/ or shareholders or stakeholders at large. This reporting mechanism should be detailed EIA reports.

This is to request you to take further necessary action in matter as per provisions of Gazette Notification No. S.O. 1533(E) dated 14/09/2006, as amended. You are advised to submit the EIA/EMP incorporating recommendations of public hearing for further consideration of the matter as per procedure laid down in the Gazette Notification SO 1533(E) dated 14/09/2006 as amended. The matter will not be considered pending till your reply as above is received.

(Shruti Shukla)
Nodal, SEIAA/
Deputy Director

No..... /Parya/SEAC/4412/2018 Dated: As above

Copy with enclosure for Information and necessary action to:

1. The Principal Secretary, Department of Environment, Govt. of Uttar Pradesh, Lucknow.
2. Advisor, IA Division, Ministry of Environment, Forests & Climate Change, Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi.
3. Additional Director, Regional Office, Ministry of Environment & Forests, (Central Region), Kendriya Bhawan, 5th Floor, Sector-H, Aliganj, Lucknow.
4. District Magistrate, Hamirpur.
5. The Member Secretary, U.P. Pollution Control Board, TC-12V, Paryavaran Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow.
6. Copy to Web Master/ guard file.

(Shruti Shukla)
Nodal, SEIAA/
Deputy Director

ANNEX 1.2: TOR COMPLIENCE

ENVIRONMENT IMPACT ASSESSMENT REPORT FOR PATYORA (KHAND 31/4) SAND/MORRUM MINE LOCATED AT VILLAGE- PATYORA, TEHSIL- HAMIRPUR, DISTRICT- HAMIRPUR, STATE- UTTAR PRADESH (AREA- 36.437 HA)	TOR COMPLIANCE

Sl. No.	ToR Points	Compliance		
		Remarks	Reference	
			Chapter No./ Section No./Table no.	Annexure No./ Figure No.
1.	All pages of technical documents/EIA/EMP etc. should be signed by the consultant and project proponent both.	Signed by the consultant and project proponent both.	-	-
2	Copy of all the analysis reports signed by analyst approved by NABL or MoEF&CC shall be annexed with EIA report and original analysis reports should be presented at the time or presentation.	Attached as Annexure		Annexure 11.2
3	MOU signed between the project proponent and the consultant should be submitted.	-	-	-
4	The TOR shall be valid strictly for the annual production/ yearly production as given in the approved Mining Plans of the respective proposal.	Year-wise production details given in chapter 2 for 5 years according to mine plan. Proposed production is 7,28,640 m^3 per year as per LOI, SSMMG and Mine Plan for Patyora sand/morrum mining project.	Chapter-2 Section 2.6 Table No. 2.6	NA
5	Regional combined EMP			

	study should be carried out.			
6	Regional combined area of homogenous leaser in cluster situation should be verified by DMO	Verified	-	-
7	Certificate from Mining Officer that there is no other mining area exist within 500 m periphery.	No other mine leases are coming within 500m other than this project. The lease has been sanctioned vide letter no. 614/Kha.MMC-TEES-VIVID (2018-2019) dated 16.07.2018 and has been attached as Annex.		Annexure 2.3
8	CSR cost to be calculated for individual lease.	CER cost of Patyora (Gata No. 31/4) Sand/Morrum Mine on Yamuna River is Rs. 9,00,000 for entire plan period i.e. 5 years. Details are incorporated in EIA report.	Chapter-9 Section 9.4.8.1 Table 9.1	NA
9	An intimation regarding conducting the monitoring to be sent to concerned District Magistrate and State Pollution Control Board office.	Compiled	-	-
10	The lab conducting the analysis should be authenticated and registered.	Analysis was carried out by E.E.P.L. MOEF&CC accredited laboratory for this project.	Chapter 11 Section 11.6	NA
11	Public hearing to be	Details of Public hearing will be	Chapter 7	

	conducted as per EIA Notification, 2006.	incorporated in the Final EIA report.	Section 7.2	
12	A copy of document in support of fact that the proponent is the rightful lessee of the mine should be given.	The applicant Sri Shailendra Yadav has obtained sand/morrum mining lease through e-tendering from the Govt. of Uttar Pradesh vide Letter of Intent no. 421/Khanij/M.M.C-tees-vividh(2017-2018) dated 07.06.2018 over an area of 36.437 Hectares on Yamuna river near Village- Patyora, Tehsil- Hamirpur, Dist-Hamirpur, State- Uttar Pradesh, over Gata no: 31/4.	Chapter 1 Section 1.1 & 1.2	Annexure1.4
13	Approved mining plans for all the mining projects.	Attached as Annexure	-	Annexure 1.3
14	All documents including approved mine plan, EIA and public hearing should be compatible with one another in terms of the mine lease area, production level, waste generation and its management and mining technology and should be in the name of the lessee. The mine plan should take into	The applicant Sri Shailendra Yadav has obtained sand/morrum mining lease through e-tendering from the Govt. of Uttar Pradesh vide Letter of Intent no. 421/Khanij/M.M.C-tees-vividh(2017-2018) dated 07.06.2018 over an area of 36.437 Hectares on Yamuna river near Village- Patyora, Tehsil- Hamirpur, Dist-Hamirpur, State- Uttar	Chapter-1 Section 1.1 Chapter-2 Section 2.1 Table No. 2.1	-

	account the conditions of the mine lease, if any, in terms of distance to be left un-worked from the river flowing nearby.	Pradesh, over Gata no: 31/4.The validity period of the contract is 5 years.		
		Information	Patyora Sand/Morrum Mining in Dist. Hamirpur, U.P. (Gata no: 31/4)	
		Area	36.437 Hectares	
		Production	7,28,640 m^3 per year	
		Mining Technologies	Opencast Semi-mechanized mining method	
		Name of the Lessee	Sri Shailendra Yadav	
15	The study area will comprise of 10 km zone around the mine lease from the lease Periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	10km zone was considered for EIA study. Study area map and waste generation compiled in EIA report and the study area map is enclosed in the EIA report.	Chapter 3 Section 3.2	Figure 3.3
16	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary and national	As per the detailed mapping with the help of toposheet, satellite imaginary and revenue records, the land-use data was collected. No such major	Chapter 3 Section 3.2	Figure 3.3

	park, migratory route of fauna, water bodies, human settlements and other ecological features should be indicated.	grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features are coming within 10km of safety zone.		
17	Land use plan of mine lease area should be prepared to encompass pre-operational, operational and post-operational phases and submitted.	As per the detailed mapping with the help of toposheet, satellite imaginary and revenue records, the land-use data was collected. The study area shows presence of Reserve Forest and rivers. Yamuna river is present onsite and the adjacent rivers are Betwa River, Patyora Canal.	Chapter 3 Section 3.4.3 Table 3.2	NA
18	Location of National Parks, Sanctuaries, Biosphere Reserves, wildlife Corridors, Tiger/ Elephant reserves (existing as well as proposed), if any, within 10 km of the mine lease should be dearly indicated supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, if any, as may be applicable to such	Environmental Sensitivity Map showing sensitive features within 15km of the project site is attached. Reserve Forest and Protected Forest are present nearby. Yamuna river is present onsite and the adjacent rivers are Betwa River, Patyora Canal are coming within 10 km of the mine lease.	Chapter 3 Table 3.2	Figure 3.2

	projects due to proximity of the ecologically sensitive areas as mentioned above should be obtained from the state Wildlife Department / Chief Wildlife Warden under the Wildlife (Protection) Act, 1972 and copy furnished.			
19	A detailed biological study for the study area (core zone and buffer zone (10 km radius of the periphery of the mine lease)) shall be carried out covering both terrestrial and aquatic flora and fauna. Details of flora and fauna, duly authenticated, separately for core and buffer zone should be furnished based on field survey clearly indicating the Schedule of the fauna present.	Flora fauna details is described in Chapter 3	Chapter 3 Section 3.7.5 Table No. 3-28	
20	Impact of change of land use should be given.	Detailed of environment management plan discussed in the EIA report. There will be no impact related to land-use as the project is riverbed sand	Chapter 3 Section 3.2	Figure 3.3

		mining project.		
21	Impact of mining on the hydrology of the area including water flow in the river adjoining the mine lease. It should also take into account the inundation of mined out area due to flow of water from the river.	The project site is over Yamuna river bed.	Chapter 2 Section 2.10.2	
22	R & R plan / compensation details for the project affected people should be furnished. While preparing the R & R plan, the National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs / STs and other weaker sections need based sample survey, family- wise, should be undertaken to assess their requirement and action programmes prepared accordingly integrating the sectoral programme of line departments of the State	There are no R&R issues involved with this project. The project site is over riverbed without any habitation. The ownership will also not be changed as the land has been taken on lease which will be returned as it is after the lease period is over.	Chapter 4 Section- 4.5.2	

	Governments.			
23	02 km kacha haul road to be made motorable. Submit Plan.	The access road till nearest metalled road will be pitched with proper alignment and made motorable.		
24	One season (Non monsoon) primary baseline data on ambient air quality ($PM_{2.5}$ PM_{1O}, SO_X and NO_X), water quality, noise level, soil and flora and fauna shall be collected and the AAQ data so collected presented data-wise in the EIA and EMP report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be justified.	The primary data collection was done for March-May 2018 (Summer Season). Baseline data for ambient air, water, land use, soil, noise, ecology and biodiversity etc. was collected and presented data wise in the report. Onsite meteorological data presented as Annex.	Chapter 3 Section 3.2.2 Table no. 3.2	Annexure 3.1
25	There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10 particularly for free silica should be given	Air quality modelling has been carried out to estimate the GLC due to movement of trucks and its impact on sensitive receptors such as settlements given in the EIA report	Chapter 4 Section 4.8	
26	Air quality modeling	Air quality modelling has been	Chapter 4	

	should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicle for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality con ours may be may be shown on a location map clear indicating the location of the site, location of sensitive receptors, if any and the habitation. The wind rose showing pre-dominant wind direction may also be indicated on the map. The impact of stone crusher nearby should also be taken into account.	incorporated in EIA report.	Section 4.8	
27	The water requirement for the project, its availability and source to be furnished. A detailed water balance should	A total of 17.40 KLD will be required for the project activities. Water will be sourced from nearby villages through hired tankers.	Chapter 2 Table 2.2	NA

	also be provided. Fresh water requirement or the project should be indicated.			
28	Necessary clearance from the Competent Authority for draw of requisite e quantity of water for the project should be provided.	There will be no withdrawal of water from ground sources. Water will be taken from nearby villages through tankers.	Chapter 2	NA
29	Details of water conservation measures proposed to be adopted in the projected should be given.	Not applicable because this is a river bed mining project and there is no scope of rainwater harvesting in absence of structures, dumps, etc.	NA	NA
30	Impact of the project on the water quality both surface and ground water should be assessed and necessary safeguard measures, if any required should be provided	Possible environmental impact and mitigation measures provided in EIA Report	Chapter 4 Section 4.7	
31	Based on actual monitored data, it may clearly be shown whether working will intersect ground water, Necessary data and documentation in this regard may be provided. In case the working ill intersects ground water table, a	The ultimate mining depth for the Patyora sand mine is 2.60 m much above the average water table. Therefore, the ground water table will not intersect during mining process. As the mining is river bed sand mining so sand will be replenished every year.	Chapter 2 Table 2.1	

	detailed hydro geological study should be undertaken and report furnished. Necessary permission from Central Ground water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.			
32	Details of first order stream, if any passing t rough lease area and modification diversion proposed, if any and the impact of the same on the hydrology should be brought out.	The project site is over Yamuna river bed. No streams or seasonal drains are crossing the project site.	Chapter 3	Figure 3.1 Figure 3.5
33	Details of rain water harvesting proposed, if an , in the project should be provided,	Not applicable because this is a river bed mining project and there is no scope of rainwater harvesting in absence of structures, dumps, etc.		
34	Information on reduced levels site elevation, working depth, ground water table etc. below natural surface level should be provided. A schematic diagram may also be provided for the	The mining activities will be carried out up to an ultimate depth of 2.6 m.	Chapter 2 Table 2.4	

	same.			
35	Quantity of solid waste generated to be estimated and details for its disposal and management should be provided. The quality, volumes and methodology planned for removal and utilization (preferably concurrently) of top soil should be indicated. Details of backfilling proposed, if any, should be given. It may be clearly indicated that out of the total waste generated during the mine life, how much quantity would be backfilled and how much quantity would be disposed of in the form of external dump (number of dumps, their height, terraces etc. to be brought out).	No solid waste will be generated during mining. Entire excavated materials will be transported.	Chapter 2 Section 2.9.1	
36	The reclamation plan, post mine land use and progressive green belt development plan shall be prepared in tabular	It's a river bed sand mining project. So mined out area will be restored by naturally (replenished in monsoon season)	Chapter 2	

	form (prescribed format) and submitted.			
37	Impact on local transport infrastructure due to the project should be indicated. Projected increase in truck traffic as a result of the project in the present road ne or (including those outside the project area) should be worked out, indicating whether it is capable of handling the increased load. Arrangement for improving the infrastructure, if contemplated (including action to be taken be other agencies such as State government) should covered.	The mined materials will be transported outside the mine lease area by trucks and dumpers. The incremental traffic due to the mining including from neighboring proposed mines has been provided in the report.	Chapter 4 Section 4.10	
38	Details of the infrastructure facilities to be provided for the mine workers should be included in the EIA report.	Shelters, canteen, drinking water and toilets will be provided for labors and truck drivers as per Mining Rules and the requirement of the mines. Man power will be about 180 persons.	Chapter 2 Section 2.6	
39	Conceptual post mining land use and Reclamation and	It's a river bed sand mining project. So mined out area will be restored by naturally	Chapter 2	

	Rehabilitation of mined out area (with plans and with adequate number of sections) should be given in the EIA report.	(replenished in monsoon season).		
40	Phase- wise plan of green belt development, plantation and compensatory afforestation should be charted d early indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.	Plantation program has been prepared as per approved mining plan and also covered under conservation plan. Plantation will be developed on approach road in the villages with co-ordination of the Village Panchayat.	Chapter 9 Section 9.5 Table 9.2 to 9.5	
41	Occupational health impact of project should be anticipated and preventive measures initiated. Details in this regard should be provided. Details of pre-placement medical emanation and periodical medical examination schedules should be incorporated in the EMP. Special attention should be in view of the stone crusher nearby.	As per the guidelines of the Mines Act, the management will take all necessary precautions. Details are provided in the EIA report.	Chapter 9 Section 9.4.8.2	

42	Measures of social-economic significance and influence to the local community proposed to be provided by project proponent should be indicated. As far as possible, quantitative dimensions may be given with time frame for Implementation	As there is no displacement or land acquisition there will be no direct impact on the local population. The impact will be mostly positive in terms of employment generation.	Chapter 4 Section 4.13	
43	Detailed environmental management plan to mitigate the environmental impacts which, should inter-alia should include the impact due to change of land use, due to loss of agricultural land and grazing land, if any, occupational health impacts beside other impacts of the projects. It's should also take into account the impacts due to stone crusher nearby and also provide for preventing the silt from going into the river.	Detailed of environment management plan discussed in the EIA report. There will be no impact related to land-use as the project is river-bed sans mining. Other impacts specific to the project are discussed in the report.	Chapter 4 Section 4.5	
44	Risk assessment and disaster management	Risk assessment and disaster management safeguard details	Chapter 7 Section 7.3	

	plan due to inundation of mine as a result of its location close to the river should also be examined and addressed.	are discussed in the EIA report.	and section 7.4	
45	Public hearing shall be undertaken as per law. Public hearing points raised and commitment of the project proponent on the same along with the time bound action plan to implement the same should be provided.	Details of Public hearing will be incorporated in the Final EIA report	Chapter 7 Section 7.2	
46	Details of litigation pending against the project, if any, with direction / order passed by anyCourt of Law against the project should be given.	No litigation is pending against the proposed project. (Refer to Form 1)		
47	The cost of project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.	Total project cost of Patyora sand mine Rs. 185 lakh (cost for 5 years). The break- up is given in the EIA Report.	Chapter 6 Section 6.4 Table 6.2	
48	Present position of distances of railway lines, National Highway	Location map and land use map already provide in the EIA report		Figure 1.1 And Figure 3.3

	including culverts and bridges, Reservoir, lake, canal, Road including culverts & bridges, Soil conservation works, nursey plantation, check dams, water supply schemes & irrigation schemes, later sources such as Springs, Infiltration galleries, Percolation wells, Hand pumps, Tube wells and existing flood control / protection work should be included and indicated in location map.			
49	Proponent should submit attested photocopy of the sanction of mining lease by the State Government	Attested photocopy of approved mine plan is enclosed as annex.	Chapter 1	Annex 1.3
50	The company will have a well laid down Environment Policy approved by its Board of Directors and it may be detailed in EIA report.	Compiled in the Final EIA report	Chapter 6 Section6.2	
51	The Environment Policy must prescribe for standard operating process/ procedures to bring into focus any	Compiled		

	infringement / deviation / violation of environment or forest norms/ conditions and it may be detailed in EIA.			
52	The hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and details of this system may be given.	Company also has an Environment Management Cell headed by the Managing Director. All issues related to statutory compliances, monitoring, etc. are the responsibility of this Cell.	Chapter 6 Section6.2	Figure 6.1
53	The company must have a system of reporting of non-compliance /violations of environmental arms to the Board of Directors of the company and/ or shareholders or stakeholders at large. This reporting mechanism should be detailed EIA reports.	Compiled		

ANNEX 1.3: APPROVE MINE PLAN

प्रेषक,

निदेशक,
भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0,
खनिज भवन, लखनऊ।

सेवा में

जिलाधिकारी
हमीरपुर।

संख्याः– 1288 /मा0 प्लान/2017 दिनांक 27/8/2018

विषयः– पट्टाधारक श्री शैलेन्द्र यादव के पक्ष में स्वीकृत जनपद–हमीरपुर मे तहसील–हमीरपुर, ग्राम–पत्यौरा, क्षेत्रफल–36.437 हे0 में उपखनिज साधारण बालू/मौरम के खनन पट्टे हेतु प्राप्त खनन योजना का अनुमोदन के संबंध में।

महोदय,

उपर्युक्त विषय के संदर्भ में सूचित करना है कि उक्त संदर्भित क्षेत्र के संबंध में पट्टाधारक श्री शैलेन्द्र यादव द्वारा प्रस्तुत खनन योजना का अनुमोदन उत्तर प्रदेश उप–खनिज (परिहार) नियमावली, 1963 के नियम–34 के उपनियम (4) के अधीन प्रदत्त अधिकारों का प्रयोग करते हुये दिनांक 27.08.2018 को कर दिया गया है।

1– "खनन योजना" का अनुमोदन निम्नलिखित शर्तों के अधीन किया गया हैः–

(अ) "खनन योजना" का अनुमोदन खनन पट्टा विलेख निष्पादन के दिनांक से आगमी 05 वर्ष की अवधि के लिए किया जाता है। खनन क्षेत्र से 728640.00 घन मी0 प्रति वर्ष खनिज का उत्पादन अनुमन्य किया गया है।

(ब) अनुमोदित अवधि में किये गये खनन कार्य के निरीक्षण के उपरान्त यदि खनन योजना में संशोधन हेतु आदेश दिये जाते है, तब संशोधित खनन योजना प्रस्तुत करने का पूर्ण उत्तरदायित्व पट्टेदार का होगा।

(स) आबद्ध नियोजित श्रमिकों को सुरक्षात्मक उपकरण प्रदान करने तथा सुरक्षित खनन कार्य करने हेतु सभी आवश्यक सावधानियां बरतने का दायित्व पट्टेदार का होगा।

(द) अनुमोदित खनन योजना की एक–एक प्रमाणित प्रति संबंधित जिलाधिकारी कार्यालय एवं निदेशालय के क्षेत्रीय कार्यालय में अभिलेखार्थ यथाशीघ्र प्रस्तुत करने का दायित्व भी पट्टेदार का होगा।

(च) अनुमोदित खनन योजना में विनिहित प्रकिया के अनुसार पट्टेदार द्वारा खनन कार्य न किये जाने के पाये जाने पर पट्टेदार के विरूद्व पट्टे की शर्त का उल्लंघन माना जायेगा और तद्नुसार कार्यवाही की जायेगी।

(छ) खनन योजना को निम्नलिखित अतिरिक्त शर्तो के साथ अनुमोदित किया जाता हैः–

1. बेंच की ऊँचाई अधिकतम 01 मी0 एवं बेंच की चौडाई न्यूनतम 10 मी0 होनी चाहिए।
2. खनन कार्य अधिकतम 03 मी0 की गहराई तक या पानी निकलने के तल, जो भी कम हो तक किया जायेगा।
3. खनन कार्य जीरो (0) लेवल से ऊपर की ओर किया जायेगा।
4. खनन पट्टा स्थल पर फर्स्ट एड बॉक्स व स्ट्रेचर रखे जायें।
5. श्रमिकों के लिये श्रमिक विश्राम गृह उनके पीने के पानी आदि की समुचित व्यवस्था की जायें।

6. खनन क्षेत्र से मुख्य मार्ग तक जाने वाले पहुँच मार्ग (कच्चे मार्ग) पर नियमित रूप से जल का छिड़काव किया जायेगा, ताकि वाहनों के आवागमन से उत्पन्न धूल को उड़ने से रोका जा सके।
7. नदी के तटबन्ध से नदी की ओर न्यूनतम 50 मी0 तक खनन कार्य किया जाना वर्जित होगा। जहॉ तक व्यवहारिक हो नदी से तटबन्ध की ओर खनन किया जायेगा।
8. खनन कार्य से निकाले गये मलवे खास कर टॉप स्वायल को व्यवस्थित रूप से एकत्रित कर रखा जायेगा।
9. पर्यावरण स्वच्छता के संबंध में भारत सरकार/राज्य सरकार द्वारा समय–समय पर जारी दिशानिर्देशों एवं माननीय न्यायालय के आदेशों का अनुपालन पट्टाधारक द्वारा किया जायेगा।

2– अस्तु आपसे अनुरोध है कि अनुमोदित खनन योजना की संलग्न मूल प्रति सम्बन्धित पट्टेदार को अनुपालन हेतु उपलब्ध करा कर उनसे प्राप्ति रसीद प्राप्त कर निदेशालय को भिजवाने का कष्ट करें ।

संलग्नकः यथोपरि ।

भवदीय,

(अनिल कुमार शर्मा)
मुख्य खान अधिकारी
कृते निदेशक।

संख्याः (1)/मा0 प्लान/2017 तद् दिनांक ।

प्रतिलिपिः–निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित :–

1–खान अधिकारी, भूतत्व एवं खनिकर्म विभाग, उ0प्र0, जनपद–हमीरपुर।
2–पट्टाधारक श्री शैलेन्द्र यादव, कैलाश कालोनी मल्ली बमौरी पो0–दमवढूंगा, तहसील–हल्द्वानी, जिला–नैनीताल।
3–खनन अनुभाग, भूतत्व एवं खनिकर्म निदेशालय, उ0प्र0, लखनऊ।

(अनिल कुमार शर्मा)
मुख्य खान अधिकारी
कृते निदेशक।

MINE PLAN

AND PROGRESSIVE MINE CLOSURE PLAN
(Submitted under Rule 34 of U.P. MMCR-1963)

FOR

SAND/MORRUM
AT
VILLAGE- PATYORA
TEHSIL- HAMIRPUR , DISTRICT- HAMIRPUR
(U.P)

AT KHAND NO. 31/4

AREA- 30.00 ACRE (36.437 HA)

LEASE PERIOD- (FIVE YEAR FROM THE DATE OF EXECUTION OF LEASE)

APPLICANT/LESSEE

SHAILENDRA YADAV

COLONY MALL BAMOURI, POST

(निलेश कुमार शर्मा)
पुत्र खान अधिकारी
खनिकर्म निदेशालय
उ०प्र० लखनऊ

4/366, VIKAS NAGAR, Lucknow -226022: PHONE 9415195706

ANNEX 1.4: LETTER OF INTENT

कार्यालय जिलाधिकारी, हमीरपुर

(खनन अनुभाग)

संख्या- 42। /खनिज-एम0एम0सी-तीस-विविध (2018-19) दिनांक- 07, जून, 2018

सहमति-पत्र (लेटर ऑफ इन्टेंट)

श्री शैलेन्द्र यादव,
कौशल कालौनी मल्ली बमौरी पोस्ट दमवाढूंगा
तहसील हल्द्वानी जिला नैनीताल।

भूतत्व एवं खनिकर्म विभाग उ0प्र0 शासन के शासनादेश संख्या-1875/86-2017-57(सा0)/2017 टी0सी0-1 दिनांक-14.08.2017 में दिये गये निर्देशानुसार उ0प्र0 उपखनिज (परिहार) नियमावली-1963 के अध्याय-4 के अन्तर्गत ई-निविदा सह ई-नीलामी के माध्यम से जनपद हमीरपुर के बालू/मौरम के क्षेत्रों को खनन पट्टा पर स्वीकृत किये जाने हेतु विज्ञप्ति संख्या-305/खनिज-एम0एम0सी-तीस-विज्ञप्ति मौरम (2018-19) दिनांक-09.05.2018 जारी की गई थी। उपरोक्त विज्ञप्ति के क्रम में आप द्वारा जनपद की तहसील हमीरपुर के ग्राम पत्यौरा में स्थित बालू/मौरम क्षेत्र खण्ड संख्या-31/4 रकबा-36.437 हे0 के खनन पट्टा हेतु मु0-201/-रु0 प्रति घनमी0 की दर ई-निविदा सह ई-नीलामी में दी गई है, जो सर्वाधिक है। आप द्वारा दी गई बोली को स्वीकार कर लिया गया है। शासनादेश दिनांक-14.08.2017 के बिन्दु संख्या-19 के उप बिन्दु (2) के "लेटर आफ इन्टेंट प्राप्त होने के उपरान्त सफल बोलीदाता/निविदादाता द्वारा 25 प्रतिशत प्रतिभूति जमा एवं 25 प्रतिशत प्रथम किस्त अर्थात पट्टें के प्रथम वर्ष के लिये निर्धारित पट्टा धनराशि का 50 प्रतिशत के सम्तुल्य धनराशि एम0एस0टी0सी0 के ई-पेमेन्ट गेट वे पर आर0टी0जी0एस0/एन0ई0एफ0टी0 द्वारा लेटर आफ इन्टेन्ट जारी होने के दो कार्य दिवसों के अन्दर जमा किया जाना होगा। उक्त धनराशि जमा करने से पूर्व सफल निविदादाता/बोलीदाता द्वारा जमा प्री बिड अर्नेस्ट मनी समायोजित कर ली जायेगी। यदि सफल बोलीदाता/निविदादाता उक्त धनराशि जमा करने में असफल होता है तो उसके द्वारा जमा अर्नेस्ट मनी जब्त कर ली जायेगी और उसके द्वारा इस सम्बन्ध में कोई शिकायत अथवा प्रत्यावेदन विचार योग्य नही होगा।"

शर्तें :-

(1) खनन पट्टें की अवधि 05 (पॉच) वर्ष होगी।

(2) क्षेत्र में आंकलित खनिज की मात्रा 7,28,640 घन मी0 पर आपके द्वारा दी गयी दर रू0-201/- प्रति घन मी0 के हिसाब से कुल रू0-14,64,56,640/- प्रथम वर्ष में देय होगी तथा आगामी वर्षो में प्रति वर्ष 10% की वृद्वि के साथ देय होगी।

(3) सफल बोलीदाता/निविदादाता, पट्टें की निर्बन्धनों और शर्तो का यथोचित पालन करने के लिये प्रतिभूति के रुप में प्रथम वर्ष के लिये बोली/निविदा की सकल धनराशि का 25 प्रतिशत और स्वामित्व की पहली किस्त के रुप में प्रथम वर्ष के लिये बोली/निविदा की सकल धनराशि का 25 प्रतिशत **दो कार्य दिवसों** के अन्दर जमा करेगा। बयाने की धनराशि (अर्नेस्ट मनी) प्रथम किस्त में समायोजित कर ली जायेगी।

(4) पट्टें के प्रथम वर्ष की शेष किस्ते एवं अनुवर्ती वर्षो में बोली/निविदा के आधार पर प्रथम वर्ष के लिये निर्धारित सकल धनराशि पर प्रत्येक वर्ष विगत वर्ष से 10 प्रतिशत बृद्धि के साथ नियमावली-1963 के चतुर्थ अनुसूची के अनुसार जमा की जायेगी।

(5) पट्टाधारक द्वारा राज्य सरकार अथवा केन्द्र सरकार द्वारा समय समय पर निर्धारित कर एवं शुल्क यथा आयकर विभाग का टी0सी0एस0, जिला खनिज फाउडेंशन न्यास (डी0एम0एफ0) आदि नियमानुसार जमा किया जायेगा।

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(6) पट्टाधारक नियम-17 के प्राविधानों के अनुसार क्षेत्र का सीमाकंन करायेगा तथा नियम-35 के अनुसार सीमा-स्तम्भ लगायेगा एवं इसका अनुरक्षण करेगा।

(7) चयनित आवेदक नियम-34 के प्राविधानों के अन्तर्गत निर्धारित अवधि के अन्दर खनन योजना, माइन्स क्लोजर प्लान एवं भारत सरकार के वन एवं पर्यावरण मंत्रालय की अधिसूचना दिनांक-14.09.2006 सपठित अधिसूचना दिनांक-15.01.2016 तथा समय-समय पर यथासंशोधित उपबन्धों के अधीन पर्यावरण अनापत्ति प्राप्त कर उसे प्रस्तुत करेगा।

(8) प्रत्येक पट्टाधारक द्वारा नियम-34 के अनुसार क्षेत्र के भूमि-उद्धार और पुर्नवासन उपाय हेतु वित्तीय आश्वासन की धनराशि निर्धारित रीति से जमा करेगा।

(9) लेटर आफ इन्टेंट जारी होने कें एक माह के अन्दर अनुमोदन हेतु खनन योजना निदेशक, भूतत्व एवं खनिकर्म के समक्ष प्रस्तुत किया जायेगा तथा अनुमोदित खनन योजना प्राप्त होने के 15 दिन के अन्दर सक्षम प्राधिकरण के समक्ष पर्यावरण स्वच्छता प्रमाण पत्र हेतु प्रस्ताव प्रस्तुत किया जाना अनिवार्य होगा।

अतः आपको निर्देशित किया जाता है कि खनन पट्टे के अन्तर्गत प्रथम वर्ष के लिये देय धनराशि रू0 14,64,56,640/- का 25% अर्थात रू0-3,66,14,160/- प्रतिभूति के रूप में तथा इतनी ही धनराशि प्रथम किस्त के रूप में अर्थात कुल धनराशि रू0-7,32,28,320/- में से बयाने के रूप में जमा धनराशि रू0-2,73,24,000/- समायोजित करते हुये शेष धनराशि रू0-4,59,04,320/- एम0एस0टी0सी0 के ई-पेंमेट गेटवे पर आर0टी0जी0एस0/एन0ई0एफ0टी0 द्वारा जमा करें। यदि नियत अवधि में धनराशि जमा नही की जाती है तो आपके द्वारा जमा की गयी बयाने की धनराशि रू0-2,73,24,000/- जब्त कर ली जायेगी जिसका पूर्ण उत्तरदायित्व आपका होगा।

(राजेन्द्र प्रताप पाण्डेय)
जिलाधिकारी
हमीरपुर

संख्या- 421 /तद्दिनांक-

प्रतिलिपि- निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. निदेशक, भूतत्व एवं खनिकर्म निदेशालय उ0प्र0 खनिज भवन, लखनऊ।
2. प्रबंध निदेशक, एम0एस0टी0सी0 लि0 द्वितीय तल सेन्टर कोर्ट बिल्डिंग 5, पार्क रोड़ हजरतगंज लखनऊ 226001

(राजेन्द्र प्रताप पाण्डेय)
जिलाधिकारी
हमीरपुर

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ANNEX 1.5: RELEVANT STANDARD FOR ENVIRONMENTAL PARAMETERS

ANNEXURE 1.5: NORMS AND STANDARDS:

A. National Ambient Air Quality Standards

Pollutant	Time	Concentration in µg/mg3 except for CO in mg/m²			Method of Measurement
		Industrial Area	Residential, Rural & other areas	Sensitive area	
Sulphur Dioxide	Annual	50	50	20	Improved West and Gaeke Method
	Average 24 hours	80	80	80	
Oxides of Nitrogen	Annual	40	40	30	Modified Jacob and Hochheiser (Na-Arsenite) Method
	Average 24 hours	80	80	80	
Carbon Monoxide	8 hours	02	02	02	Non Dispersive Infra Red Spectroscopy (NDIR)
	1 hours	04	04	04	
Particulate Matter 10 (PM 10)	Annual	60	60	60	Gravimetric
	Average 24 hours	100	100	100	
Particulate Matter 2.5 (PM 2.5)	Annual	40	40	40	Gravimetric
	Average 24 hours	60	60	60	

Source: Gazette of India Notification, dated 16th Nov, 2009

**** Annual Arithmetic Means of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals***

***** 24 hourly or 8 hourly or 01 hourly monitored values, as applicable shall be complied with 98% of the time in a year. 2% of the time they may exceed the limits but not on two consecutive days of monitoring.***

B. Ambient Noise Standards, CPCB

Area Code	Category of Area	Limits in dB(A), Leq	
		Day time (06:00 hrs to 20:00 hrs)	Night time (20:00 hrs to 06:00 hrs)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone*	50	40

C. Standard Classification of Soil

Sl. No.	Soil Test	Classification
1.	pH	• <4.5 Extremely acidic • 4.51- 5.50 Very strongly acidic • 5.51-6.0 moderately acidic • 6.01-6.50 slightly acidic • 6.51-7.30 Neutral

Sl. No.	Soil Test	Classification
		• 7.31-7.80 slightly alkaline • 7.81-8.50 moderately alkaline • 8.51-9.0 strongly alkaline • 9.01 very strongly alkaline
2	Salinity Electrical Conductivity (ppm) (1 ppm = 640 µmhos/cm)	• Upto 1.00 Average • 1.01-2.00 harmful to germination • 2.01-3.00 harmful to crops (sensitive to salts)
3	Organic Carbon (%)	• Upto 0.2: very less • 0.21-0.4: less • 0.41-0.5 medium, • 0.51-0.8: on an average sufficient • 0.81-1.00: sufficient • >1.0 more than sufficient
4	Nitrogen (kg/ha)	• Upto 50 very less • 51-100 less • 101-150 good • 151-300 Better • >300 sufficient
5	Phosphorus (kg/ha)	• Upto 15 very less • 16-30 less • 31-50 medium, • 51-65 on an average sufficient • 66-80 sufficient • >80 more than sufficient
6	Potassium (kg/ha)	• 0 -120 very less • 120-180 less • 181-240 medium • 241-300 average • 301-360 better • >360 more than sufficient

Source: Handbook of Agriculture, Indian Council of Agriculture Research, New Delhi 1961.

D. Method and Unit of Soil Parameters

Sl. No.	Parameters	Analytical Method	Reference
1	Texture	Sieve analysis &Hygro meter	------
2	Moisture Content	Gravimetric	Department of Agriculture & Cooperation, Govt of India Page No. 76-77:2011
3	pH	pH meter	IS2720- Part 26, 1987 by pH meter
4	Conductivity (1:2)	Conductivity meter	Department of Agriculture & Cooperation, Govt of India Page No. 81-82:2011

Sl. No.	Parameters	Analytical Method	Reference
5	Organic Matter	Black method	IS2720-(Part 22),1972, Reaffirmed 2001
7	Organic Carbon	Calculation	IS2720-(Part 22),1972, Reaffirmed 2001 (By Calculation)
8	Potassium	Flame Photometric	TM-S/13
9	Phosphorus	Spectrophotometric	TM-S/11
10	Nitrogen	Distillation & Titration	TM-S/17
11	Infiltration Rate		TM-S/40
12	Bulk Density	Sand replacement, core cutter	TM-S/34
13	Porosity		TM-S/33

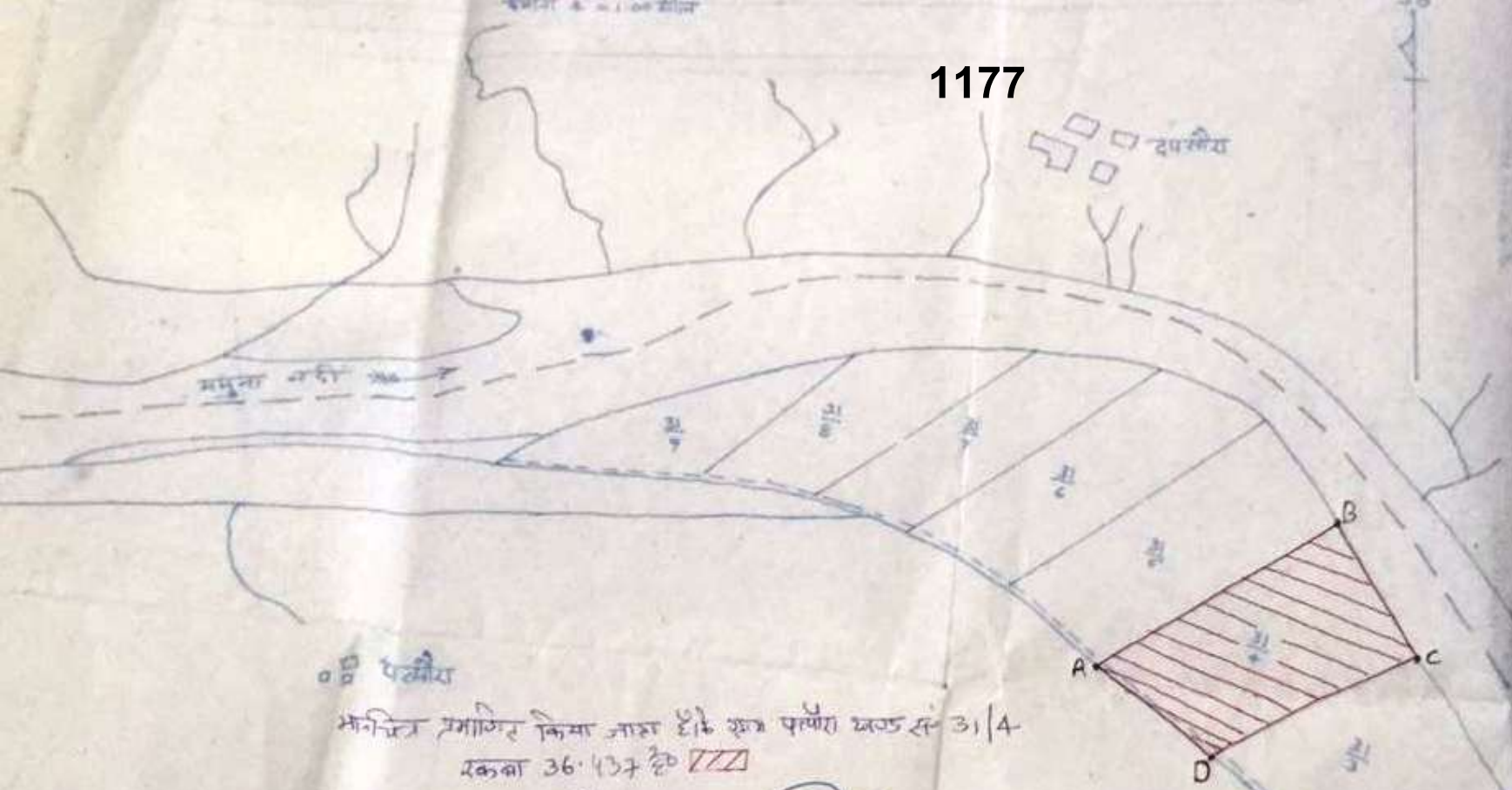
****-Distance and direction are in respect of nearest mining block and on the basis of aerial distance Source: On-site monitoring/sampling by EEPL***

E. Water Quailty Criteria as per CPCB

Designated Best Use	Class of Water	Criteria
Drinking water source without conventional treatment but after disinfection	A	Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20°C 2mg/l or less
Outdoor bathing (Organised)	B	Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Propagation of Wild life and Fisheries	D	pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	pH between 6.0 to 8.5 Electrical Conductivity at 25°C micro mhos/cm Max.2250 Sodium adsorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria

Source: Handbook of Agriculture, Indian Council of Agriculture Research, New Delhi

ANNEX 2.1: KHASRA MAP WITH M.O. SIGNATURE



दफरौंदा

मानचित्र तमांकित किया जाता है। इस पत्थरा खण्ड सं० 31/4

रकबा 36.437 हे०

सर्वेक्षक
हमीरपुर

(के० के० राय)
खान अधिकारी
हमीरपुर

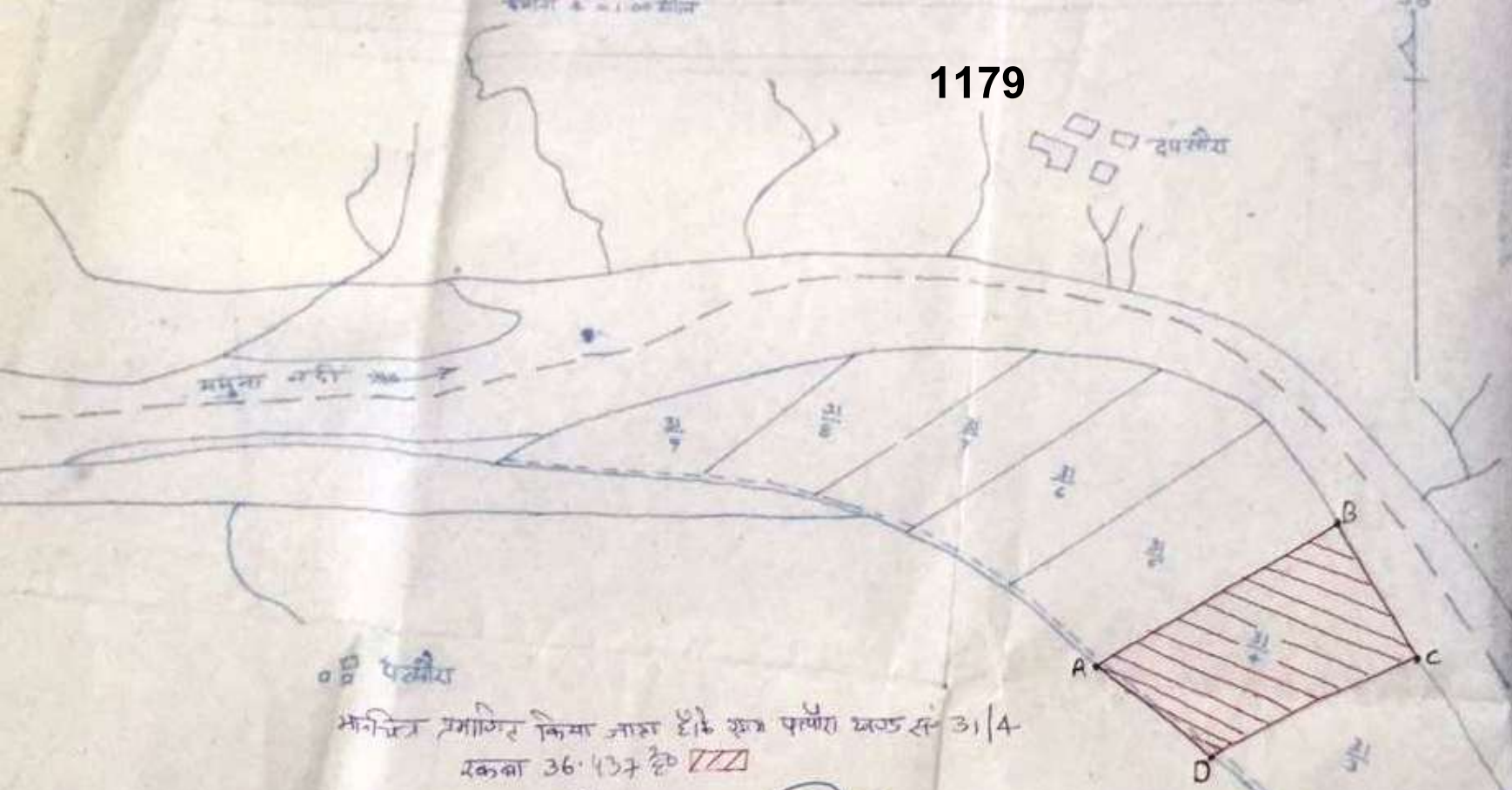
A → 25° 55' 21.03" N
80° 16' 04.85" E

B → 25° 55' 43.32" N
80° 16' 22.63" E

C → 25° 55' 31.32" N
80° 16' 34.75" E

D → 25° 55' 14.06" N
80° 16' 19.84" E

ANNEX 2.2: DOCUMENT WITH VERIFIED CO-ORDINATE



दफरौंदा

मानचित्र तमांकित किया जाता है। ग्राम पचौरा खण्ड सं० 31/4

रकबा 36.437 हे०

सर्वेक्षक
हमीरपुर

(के० के० राय)
खान अधिकारी
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A → 25° 55' 21.03" N
80° 16' 04.85" E

B → 25° 55' 43.32" N
80° 16' 22.63" E

C → 25° 55' 31.32" N
80° 16' 34.75" E

D → 25° 55' 14.06" N
80° 16' 19.84" E

ANNEX 2.3: ADJACENT LEASES WITHIN 500M OF PROJECT SITE

कार्यालय जिलाधिकारी, हमीरपुर
(खनन अनुभाग)

संख्या– 614 /खनिज–एम0एम0सी–तीस–विविध (2018–19) दिनांक– 16 जुलाई, 2018

कलस्टर प्रमाण पत्र

प्रमाणित किया जाता है कि श्री शैलेन्द्र यादव निवासी कौशल कालौनी मल्ली बमौरी पोस्ट दमवाढुंगा तहसील हल्द्वानी जिला नैनीताल (उत्तराखण्ड) को पत्रांक–421/खनिज–एम0एम0सी–तीस–विविध (2018–19) दिनांक–07.06.2018 के माध्यम से गाटा संख्या/खण्ड संख्या–31/4 ग्राम–पत्यौरा तहसील व जनपद हमीरपुर हेतु कुल 36.437 हे0 खनन क्षेत्र के सम्बन्ध में सहमति पत्र (एल0ओ0आई0) निर्गत किया गया है। अधोहस्ताक्षरी द्वारा पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार की ई0आई0ए0 अधिसूचना–2006 (यथासंशोधित) /ई0आई0 ए0 अधिसूचना–15.01.2016 के परिशिष्ट–11 में दिये गये प्राविधानों के अन्तर्गत उक्त खनन क्षेत्र का परीक्षण किया गया, जिसके अनुसार प्रश्नगत खनन क्षेत्र की स्थिति निम्नवत है :–

द) प्रश्नगत खनन क्षेत्र की परिधि से 500 मीटर दूरी में निम्नांकित खनन क्षेत्र स्वीकृत है :–

1– खण्ड संख्या–31/5 ग्राम पत्यौरा खनन क्षेत्र 36.437 हेक्टेअर

उक्त खनन क्षेत्रों का कुल योग–72.874 हे0 है जो कि 50 हे0 से अधिक है। सम्बन्धित प्रकरण ई0आई0ए0 अधिसूचना की श्रेणी बी–1 से आच्छादित होता है।

यह भी प्रमाणित किया जाता है कि उपरोक्त विवरण में ई0आई0ए0ए0 भारत सरकार /एस0ई0आई0ए0ए0/डी0ई0आई0ए0ए0 से निर्गत पूर्व– पर्यावणीय क्लीयरेन्स के गाटा/खण्ड संख्या को सम्मिलित कर लिया गया है एवं उक्त प्रमाण पत्र ई0आई0ए0 अधिसूचना 2006 (यथासंशोधित)/अधिसूचना–15.01.2016 के परिशिष्ट–11 के प्राविधानों के अनुसार है।

16/7/18

(के0के0 राय)
खान अधिकारी,
हमीरपुर

Year	Month	Day	Hour	Wind Direction	Wind Speed	Rain Fall
18	3	1	1	269	11.5	0
18	3	1	2	270	11.6	0
18	3	1	3	268	11.5	0
18	3	1	4	273	11.3	0
18	3	1	5	271	11.9	0
18	3	1	6	270	11.8	0
18	3	1	7	313	11.8	0
18	3	1	8	311	11.6	0
18	3	1	9	316	11.8	0
18	3	1	10	317	11.6	0
18	3	1	11	318	11.4	0
18	3	1	12	313	11.8	0
18	3	1	13	269	11.6	0
18	3	1	14	270	11.8	0
18	3	1	15	268	11.8	0
18	3	1	16	273	11.5	0
18	3	1	17	271	11.3	0
18	3	1	18	270	11.7	0
18	3	1	19	313	11.8	0
18	3	1	20	311	11.6	0
18	3	1	21	316	11.3	0
18	3	1	22	317	11.3	0
18	3	1	23	318	11.8	0
18	3	1	24	313	12.0	0
18	3	2	1	270	11.8	0
18	3	2	2	272	11.4	0
18	3	2	3	267	11.9	0
18	3	2	4	268	11.8	0
18	3	2	5	266	11.6	0
18	3	2	6	270	11.7	0
18	3	2	7	313	11.8	0
18	3	2	8	311	11.7	0
18	3	2	9	316	11.6	0
18	3	2	10	317	11.7	0
18	3	2	11	318	11.5	0
18	3	2	12	313	11.5	0
18	3	2	13	313	12.0	0
18	3	2	14	311	11.8	0
18	3	2	15	316	11.3	0

18	3	2	16	317	11.9	0
18	3	2	17	318	11.9	0
18	3	2	18	313	11.7	0
18	3	2	19	313	11.8	0
18	3	2	20	311	11.4	0
18	3	2	21	316	11.9	0
18	3	2	22	317	12.0	0
18	3	2	23	318	11.4	0
18	3	2	24	313	11.4	0
18	3	3	1	269	11.9	0
18	3	3	2	270	11.8	0
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18	3	3	5	271	11.5	0
18	3	3	6	270	12.0	0
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18	3	3	8	311	11.7	0
18	3	3	9	316	11.8	0
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18	3	3	11	318	11.9	0
18	3	3	12	313	11.7	0
18	3	3	13	266	11.9	0
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18	3	3	15	271	11.7	0
18	3	3	16	268	11.5	0
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18	3	3	18	271	11.7	0
18	3	3	19	313	11.9	0
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18	3	3	22	317	11.4	0
18	3	3	23	318	11.6	0
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18	3	4	1	270	11.5	0
18	3	4	2	272	11.8	0
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18	3	4	4	268	11.3	0
18	3	4	5	270	11.6	0
18	3	4	6	272	12.0	0
18	3	4	7	313	11.3	0

18	3	4	8	311	11.4	0
18	3	4	9	316	11.7	0
18	3	4	10	317	11.7	0
18	3	4	11	318	11.4	0
18	3	4	12	313	12.0	0
18	3	4	13	313	11.4	0
18	3	4	14	311	11.9	0
18	3	4	15	316	11.7	0
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18	3	4	17	318	11.9	0
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18	3	4	20	273	11.9	0
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18	3	4	22	270	11.9	0
18	3	4	23	273	11.7	0
18	3	4	24	271	11.4	0
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18	3	5	2	311	11.5	0
18	3	5	3	316	11.8	0
18	3	5	4	317	12.0	0
18	3	5	5	318	11.8	0
18	3	5	6	313	11.4	0
18	3	5	7	272	11.6	0
18	3	5	8	266	11.9	0
18	3	5	9	270	11.4	0
18	3	5	10	271	12.0	0
18	3	5	11	270	11.5	0
18	3	5	12	269	11.5	0
18	3	5	13	313	11.9	0
18	3	5	14	311	11.9	0
18	3	5	15	316	11.3	0
18	3	5	16	317	11.7	0
18	3	5	17	318	11.9	0
18	3	5	18	313	11.8	0
18	3	5	19	313	11.9	0
18	3	5	20	311	11.6	0
18	3	5	21	316	12.0	0
18	3	5	22	317	11.5	0
18	3	5	23	318	11.3	0

18	3	5	24	313	11.9	0
18	3	6	1	313	11.6	0
18	3	6	2	311	11.9	0
18	3	6	3	316	11.8	0
18	3	6	4	317	11.5	0
18	3	6	5	318	11.8	0
18	3	6	6	313	11.9	0
18	3	6	7	313	11.4	0
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18	3	6	9	316	11.9	0
18	3	6	10	317	11.7	0
18	3	6	11	318	12.0	0
18	3	6	12	313	11.9	0
18	3	6	13	269	11.7	0
18	3	6	14	270	11.3	0
18	3	6	15	268	11.5	0
18	3	6	16	273	11.6	0
18	3	6	17	271	11.5	0
18	3	6	18	270	11.7	0
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18	3	6	20	248	11.5	0
18	3	6	21	244	11.6	0
18	3	6	22	245	11.7	0
18	3	6	23	248	11.8	0
18	3	6	24	247	11.7	0
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18	3	7	8	311	11.9	0
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18	3	7	10	317	11.7	0
18	3	7	11	318	12.0	0
18	3	7	12	313	11.8	0
18	3	7	13	269	11.5	0
18	3	7	14	270	11.8	0
18	3	7	15	268	11.9	0

18	3	7	16	273	11.4	0
18	3	7	17	271	11.7	0
18	3	7	18	270	11.9	0
18	3	7	19	360	11.7	0
18	3	7	20	2	11.5	0
18	3	7	21	358	11.5	0
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18	3	8	19	270	11.5	0
18	3	8	20	272	11.7	0
18	3	8	21	267	11.4	0
18	3	8	22	268	11.6	0
18	3	8	23	266	11.5	0
18	3	8	24	270	11.7	0
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18	3	9	2	311	11.4	0
18	3	9	3	316	11.7	0
18	3	9	4	317	11.9	0
18	3	9	5	318	11.3	0
18	3	9	6	313	11.8	0
18	3	9	7	357	11.9	0

18	3	9	8	359	11.3	0
18	3	9	9	3	11.5	0
18	3	9	10	4	11.7	0
18	3	9	11	360	11.6	0
18	3	9	12	359	11.6	0
18	3	9	13	269	11.8	0
18	3	9	14	270	11.5	0
18	3	9	15	268	11.7	0
18	3	9	16	273	11.9	0
18	3	9	17	271	11.8	0
18	3	9	18	270	11.7	0
18	3	9	19	313	11.4	0
18	3	9	20	311	12.0	0
18	3	9	21	316	11.4	0
18	3	9	22	317	11.7	0
18	3	9	23	318	11.8	0
18	3	9	24	313	11.3	0
18	3	10	1	313	11.4	0
18	3	10	2	311	11.4	0
18	3	10	3	316	11.6	0
18	3	10	4	317	11.8	0
18	3	10	5	318	11.7	0
18	3	10	6	313	11.9	0
18	3	10	7	266	11.4	0
18	3	10	8	270	11.5	0
18	3	10	9	271	12.0	0
18	3	10	10	268	11.7	0
18	3	10	11	273	11.4	0
18	3	10	12	271	11.5	0
18	3	10	13	270	11.6	0
18	3	10	14	272	11.9	0
18	3	10	15	267	11.6	0
18	3	10	16	268	11.8	0
18	3	10	17	270	11.9	0
18	3	10	18	270	11.4	0
18	3	10	19	313	11.9	0
18	3	10	20	311	11.7	0
18	3	10	21	316	12.0	0
18	3	10	22	317	11.4	0
18	3	10	23	318	11.6	0

18	3	10	24	313	11.4	0
18	3	11	1	267	11.6	0
18	3	11	2	274	11.7	0
18	3	11	3	275	11.7	0
18	3	11	4	269	11.7	0
18	3	11	5	270	11.8	0
18	3	11	6	270	11.6	0
18	3	11	7	247	11.8	0
18	3	11	8	248	11.6	0
18	3	11	9	244	11.5	0
18	3	11	10	245	11.7	0
18	3	11	11	248	11.4	0
18	3	11	12	247	11.8	0
18	3	11	13	269	11.5	0
18	3	11	14	270	11.5	0
18	3	11	15	268	11.9	0
18	3	11	16	273	11.7	0
18	3	11	17	271	11.8	0
18	3	11	18	270	11.8	0
18	3	11	19	269	11.6	0
18	3	11	20	270	11.7	0
18	3	11	21	268	11.8	0
18	3	11	22	269	11.5	0
18	3	11	23	270	11.7	0
18	3	11	24	268	12.0	0
18	3	12	1	313	11.7	0
18	3	12	2	311	11.9	0
18	3	12	3	316	11.4	0
18	3	12	4	317	11.5	0
18	3	12	5	318	11.8	0
18	3	12	6	313	11.9	0
18	3	12	7	269	11.6	0
18	3	12	8	270	11.5	0
18	3	12	9	268	11.7	0
18	3	12	10	273	11.6	0
18	3	12	11	271	11.3	0
18	3	12	12	270	11.7	0
18	3	12	13	313	11.6	0
18	3	12	14	311	11.3	0
18	3	12	15	316	11.8	0

18	3	12	16	317	12.0	0
18	3	12	17	318	11.4	0
18	3	12	18	313	11.5	0
18	3	12	19	269	11.6	0
18	3	12	20	270	11.7	0
18	3	12	21	268	12.0	0
18	3	12	22	273	11.7	0
18	3	12	23	271	12.0	0
18	3	12	24	270	11.9	0
18	3	13	1	357	12.0	0
18	3	13	2	359	11.5	0
18	3	13	3	3	11.5	0
18	3	13	4	4	11.4	0
18	3	13	5	360	11.7	0
18	3	13	6	359	11.5	0
18	3	13	7	247	11.6	0
18	3	13	8	248	12.0	0
18	3	13	9	244	11.7	0
18	3	13	10	245	11.7	0
18	3	13	11	248	11.6	0
18	3	13	12	247	11.5	0
18	3	13	13	269	11.5	0
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18	5	25	22.00	274	12.7	0
18	5	25	23.00	269	12.9	0
18	5	25	24.00	268	13.2	0
18	5	26	1.00	356	13.3	0
18	5	26	2.00	358	13.2	0
18	5	26	3.00	1	13.2	0
18	5	26	4.00	359	13.3	0
18	5	26	5.00	4	13.3	0
18	5	26	6.00	357	13.3	0
18	5	26	7.00	271	12.7	0
18	5	26	8.00	278	12.8	0
18	5	26	9.00	279	12.8	0
18	5	26	10.00	277	12.7	0
18	5	26	11.00	280	13.2	0
18	5	26	12.00	273	13.2	0
18	5	26	13.00	313	12.7	0
18	5	26	14.00	311	13.2	0
18	5	26	15.00	316	13.2	0

18	5	26	16.00	317	13.0	0
18	5	26	17.00	318	12.9	0
18	5	26	18.00	313	13.0	0
18	5	26	19.00	290	13.0	0
18	5	26	20.00	283	13.3	0
18	5	26	21.00	288	12.7	0
18	5	26	22.00	285	13.1	0
18	5	26	23.00	293	13.0	0
18	5	26	24.00	295	13.0	0
18	5	27	1.00	85	13.1	0
18	5	27	2.00	87	12.7	0
18	5	27	3.00	89	12.9	0
18	5	27	4.00	84	12.8	0
18	5	27	5.00	91	13.2	0
18	5	27	6.00	88	13.1	0
18	5	27	7.00	85	13.1	0
18	5	27	8.00	87	12.9	0
18	5	27	9.00	89	13.3	0
18	5	27	10.00	84	12.9	0
18	5	27	11.00	91	12.8	0
18	5	27	12.00	88	13.2	0
18	5	27	13.00	85	12.9	0
18	5	27	14.00	87	12.8	0
18	5	27	15.00	89	13.1	0
18	5	27	16.00	84	12.8	0
18	5	27	17.00	91	12.8	0
18	5	27	18.00	88	12.7	0
18	5	27	19.00	87	13.0	0
18	5	27	20.00	84	13.1	0
18	5	27	21.00	81	13.1	0
18	5	27	22.00	83	13.2	0
18	5	27	23.00	88	13.2	0
18	5	27	24.00	84	12.7	0
18	5	28	1.00	94	13.1	0
18	5	28	2.00	93	12.7	0
18	5	28	3.00	88	12.9	0
18	5	28	4.00	89	13.1	0
18	5	28	5.00	90	13.1	0
18	5	28	6.00	87	13.2	0
18	5	28	7.00	89	12.9	0

18	5	28	8.00	84	13.0	0
18	5	28	9.00	91	13.2	0
18	5	28	10.00	88	13.0	0
18	5	28	11.00	85	13.1	0
18	5	28	12.00	83	12.7	0
18	5	28	13.00	66	12.7	0
18	5	28	14.00	69	12.8	0
18	5	28	15.00	73	12.7	0
18	5	28	16.00	68	13.0	0
18	5	28	17.00	65	12.9	0
18	5	28	18.00	62	13.1	0
18	5	28	19.00	359	13.1	0
18	5	28	20.00	358	12.8	0
18	5	28	21.00	2	13.0	0
18	5	28	22.00	10	13.1	0
18	5	28	23.00	1	13.0	0
18	5	28	24.00	359	13.2	0
18	5	29	1.00	3	13.2	0
18	5	29	2.00	114	13.2	0
18	5	29	3.00	111	12.9	0
18	5	29	4.00	108	12.8	0
18	5	29	5.00	109	12.8	0
18	5	29	6.00	113	12.9	0
18	5	29	7.00	82	13.2	0
18	5	29	8.00	86	13.0	0
18	5	29	9.00	89	13.1	0
18	5	29	10.00	87	13.1	0
18	5	29	11.00	85	13.2	0
18	5	29	12.00	87	13.2	0
18	5	29	13.00	89	12.9	0
18	5	29	14.00	84	12.9	0
18	5	29	15.00	91	12.7	0
18	5	29	16.00	88	13.2	0
18	5	29	17.00	92	12.7	0
18	5	29	18.00	90	13.0	0
18	5	29	19.00	87	13.2	0
18	5	29	20.00	84	13.1	0
18	5	29	21.00	88	13.1	0
18	5	29	22.00	86	12.8	0
18	5	29	23.00	85	12.9	0

18	5	29	24.00	87	13.0	0
18	5	30	1.00	89	12.9	0
18	5	30	2.00	84	12.8	0
18	5	30	3.00	91	13.1	0
18	5	30	4.00	88	12.8	0
18	5	30	5.00	85	13.0	0
18	5	30	6.00	87	13.1	0
18	5	30	7.00	89	13.0	0
18	5	30	8.00	84	13.3	0
18	5	30	9.00	91	13.1	0
18	5	30	10.00	88	13.0	0
18	5	30	11.00	87	13.3	0
18	5	30	12.00	84	12.7	0
18	5	30	13.00	81	12.8	0
18	5	30	14.00	83	12.9	0
18	5	30	15.00	88	13.1	0
18	5	30	16.00	84	13.3	0
18	5	30	17.00	89	13.2	0
18	5	30	18.00	92	13.1	0
18	5	30	19.00	64	13.0	0
18	5	30	20.00	69	13.2	0
18	5	30	21.00	73	13.2	0
18	5	30	22.00	68	13.1	0
18	5	30	23.00	65	13.1	0
18	5	30	24.00	67	12.8	0
18	5	31	1.00	84	13.2	0
18	5	31	2.00	94	13.1	0
18	5	31	3.00	93	12.8	0
18	5	31	4.00	88	12.9	0
18	5	31	5.00	89	13.2	0
18	5	31	6.00	90	12.7	0
18	5	31	7.00	85	13.3	0
18	5	31	8.00	87	12.8	0
18	5	31	9.00	89	12.8	0
18	5	31	10.00	84	13.1	0
18	5	31	11.00	91	12.9	0
18	5	31	12.00	88	13.2	0
18	5	31	13.00	84	13.1	0
18	5	31	14.00	94	12.9	0
18	5	31	15.00	93	12.9	0

18	5	31	16.00	88	12.8	0
18	5	31	17.00	87	13.3	0
18	5	31	18.00	85	13.1	0
18	5	31	19.00	87	12.9	0
18	5	31	20.00	89	13.0	0
18	5	31	21.00	84	13.2	0
18	5	31	22.00	91	13.2	0
18	5	31	23.00	88	12.8	0
18	5	31	24.00	92	13.3	0

ANNEX 11.1: QCI CERTIFICATE OF GREENCINDIA

Quality Council of India

National Accreditation Board for Education & Training

Certificate OF Accreditation

Greencindia Consulting Private Limited

605-611, Level-5, Sector-5, Shopprix Mall, Vaishali-201010, Ghaziabad

Accredited as **Category - A** organization under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations: Version 3 for preparing EIA-EMP reports in the following Sectors:

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including opencast / underground mining	1	1 (a) (i)	A
2	River Valley projects	3	1 (c)	A
3	Thermal power plants	4	1 (d)	A
4	Coal washeries	6	2 (a)	A
5	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	A
6	Cement plants	9	3 (b)	A
7	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
8	Air ports	29	7 (a)	A
9	Industrial estates/ parks/ complexes/areas, export processing Zones(EPZs), Special Economic Zones(SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
10	Highways	34	7 (f)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RA AC minutes dated March 06, 2020 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/20/1015 dated April 16, 2020.The accreditation needs to be renewed before the expiry date by Greencindia Consulting Private Limited, Ghaziabad, following due process of assessment.

Sd/-
Sr. Director, NABET
Dated: April 16, 2020

Certificate No.
NABET/ EIA/1922/ RA 0159

Valid till
October 27, 2022

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

ANNEX 11.2: NABL CERTIFICATE

F. No. Q-15012/17/2017-CPW
Government of India
Ministry of Environment, Forest and Climate Change
(CP Division)

Agni-233, Indira Paryavaran Bhavan,
Jor Bagh Road,
New Delhi – 110 003.
Dated, the 15 October ,2018

To

M/s Envirotech East Pvt. Ltd.
Bengal Ambuja Commercial Complex
UN F-13, 1050/1, SurveyPark
Kolkata-700075

Subject: -Renewal of Recognition of M/s Envirotech East Pvt. Ltd., Bengal Ambuja Commercial Complex, UN F-13, 1050/1, Survey Park, Kolkata-700075, as Environmental Laboratory under the Environment (Protection) Act, 1986 – regarding.

Sir,

I am directed to refer to your application dated:08.04.2017 for renewal of recognition of your laboratory under Environment (Protection) Act, 1986. Based on the recommendations of the Expert Committee for Recognition of Environmental Laboratories in its 55th meeting held on 17.09.2018 and your acceptance of the revised terms and conditions at Annexure-III & IV of the Guidelines for recognition of Environmental Laboratories, this Ministry approves the renewal of recognition of M/s Envirotech East Pvt. Ltd., Bengal Ambuja Commercial Complex, UN F-13, 1050/1, Survey Park, Kolkata-700075 for five years, as shall be notified in the Gazette of India.

2. As sought in your aforementioned application, M/s Envirotech East Pvt. Ltd. may undertake the following tests:

(i) **Physical Tests:** Conductivity, Colour, pH, Fixed & volatile solids, Total solids, Total dissolved solids, Total suspended solids, Turbidity, Temperature, Velocity & discharge measurement of industrial effluent stream, Odour, Settleable solids and Sludge Volume Index (SVI).

(ii) **Inorganic (General & Non-metallic):** Acidity, Alkalinity, Ammonical nitrogen, Chloride, Chlorine residual, Dissolved oxygen, Fluoride, Total hardness, Total kjehldal nitrogen (TKN), Nitrite nitrogen, Nitrate nitrogen, Phosphate, Sulphate, Carbon dioxide, Sulphite, Silica, Cyanide and Sulphide.

(iii) **Inorganic (Trace metals):** Boron, Cadmium, Calcium, Chromium Total, Chromium Hexavalent, Copper, Iron, Lead, Magnesium, Mercury, Nickel, Potassium, Sodium, Sodium absorption ratio, Zinc, Arsenic, Aluminum, Beryllium, Manganese, Selenium, Silver, Tin, Antimony, Cobalt and Vanadium.

(iv) **Organics (General) and Trace Organics:** Bio-chemical oxygen demand (BOD), Chemical oxygen demand (COD), Oil & grease, Phenol, Pesticide ((Organo-chlorine, Organo nitrogen-phosphorous), Surfactants, Poly-Chlorinated biphenyl (PCB's) each, Polynuclear aromatic hydrocarbon (PAH) each.

(v) **Microbiological Tests:** Total Coliform, Faecal Coliform, Faecal streptococci, E. coli, Total Plate Count, Enterococcus and Coliphage.

(vi) **Toxicological Tests:** Bioassay method for evaluation of toxicity using fish, Measurement of toxicity using zebra fish (dimensionless toxicity test).

(vii) **Biological Tests:** Benthic Organism identification and count, Planktonic identification count, Chlorophyll .

(viii) **Hazardous Waste:** Preparation of Leachate (TCLP extract/water extract), Toxicity and Measurement of heavy metals/ pesticides in the waste/ leachate

(ix) **Soil/ Sludge/ Sediment and Solid Waste:** Boron, Cation Exchange Capacity (CEC), Electrical Conductivity, Nitrogen available, Organic carbon/ matter (chemical method), pH, Phosphorous (available), Phosphate (ortho), Phosphate (total), Potassium, SAR in soil extract, Sodium, Soil moisture, TKN, Calorific value, Calcium, Chloride, Colour, Heavy metal, Magnesium, Nitrate, Nitrite, PAH, Pesticide, Potash (available), Sulphate, Sulphur and Water holding capacity.

(x) **Ambient Air/ Fugitive Emissions:** Nitrogen dioxide (NO_2), Sulphur dioxide (SO_2), Total suspended particulate matter, Respirable suspended particulate matter (PM_{10}), Ammonia, Carbon monoxide,Chlorine, Fluoride, Non methane hydrocarbon, Lead, Methane, Ozone, Benzene Toluene Sxlene (BTX), Polycyclic aromatic hydrocarbon (PAH) Benzo (a)- Pyrine & Other, $PM_{2.5}$, Volatile Organics Carbon.Arsenic and Nickel.

(xi) **Stack Gases/ Source Emission:** Particulate matter, Sulphur dioxide, Velocity & flow, Carbon dioxide, Carbon Monoxide, Temperature, Oxygen, Oxides of nitrogen, Acid mist, Ammonia, Fluoride (Particulate), Fluoride (gaseous), Hydro-chloric acid, Total Hydro carbon and Hydrogen Sulphide.

(xii) **Noise Level:** Noise level measurement (20 to 140 dba), Ambient Noise & Source-specific Noise .

(xiii) **Meteorological:** Ambient temperature, Wind direction, Wind speed, Relative Humidity and Rainfall.

3. The laboratory shall compulsorily participate in the Analytical Quality Control (AQC) exercise conducted by the Central Pollution Control Board (CPCB) at least once a year to ascertain the capability of the laboratory and analyses carried out and shall submit quarterly progress reports to this Ministry.

4. Periodic surveillance of the recognized environmental laboratory will be undertaken by this Ministry/ CPCB to assess its proper functioning, systematic operation and reliability of data generated at the laboratory.

5. It is also mandatory for the laboratory to have requisite accreditations of the NABL/ ISO 9001 and OHSAS and its renewal as per accreditation rules. Permission in para 2 above is subject to such accreditations and renewal, as applicable.

6. The laboratory should compulsorily follow the accepted Terms & Conditions. In case of serious non-compliance of any of the Terms and Conditions, the laboratory may be black-listed for a minimum period of two years and civil/ criminal proceedings, as applicable, may be initiated for performing functions on behalf of the Government in an unauthorized manner.

Yours faithfully,

Susan

(Dr. Susan George K.)
Scientist 'D'
Tel. No. 011-24695327
Email: susan.george@nic.in

Copy to:

1. Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, New Delhi – 110032.
2. Member Secretary, West Bengal Pollution Control Board Paribesh Bhavan, 10A, Block-L.A., Sector III, Salt Lake City, Calcutta - 700 106
3. Chief Conservator of Forests (C), Ministry of Env. and Forests, Regional Office(EZ), A/3, Chandersekharpur, West Bengal Bhubaneswar-751023
4. IT Division, MoEF&CC, New Delhi-110003: for uploading on MoEF&CC website

Dir.,